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A SYMPOSIUM

ON THE VALUE OF HUMANISTIC, PARTICULARLY CLASSICAL,
STUDIES AS A TRAINING FOR MEN OF AFFAIRS¹

I. LETTERS

1. FROM THE HON. JAMES BRYCE
Ambassador of Great Britain

It is matter of great regret to me that I cannot attend your Conference, for the longer I watch the currents that are now affecting the higher education, the more I lament the diminished attention that is today given to classical studies. Most people seem to think that a language no longer used by a nation as its daily speech is a dead language and has no value for the modern world. But the truth is that no language which enshrines a great literature and through which the thought of the past speaks to the thinkers of the present can ever die. Such a language is far more alive than those spoken languages which contain little worth reading. Now in the Greek and Roman writers we find much that is not only equal in intrinsic excellence to anything produced since, but much that is quickening and stimulating us just because it is ancient, because it carries us into regions of thought and belief which differ profoundly from those of modern

¹ Part of the Programme of the Classical Conference at Ann Arbor, Michigan, April 3, 1909.

Through the kind assistance of the Board of Regents of the University of Michigan and the courtesy of the publishers of the *School Review*, it has been possible to secure some reprints of this symposium for distribution. Those desiring a copy may address (inclosing a two-cent stamp for postage) Mr. LOUIS P. JOCELYN, Secretary Michigan Schoolmasters' Club, South Division St., Ann Arbor, Mich. The previous symposiums of this series were as follows:

I. "The Value of Humanistic, Particularly Classical, Studies as a Preparation for the Study of Medicine and Engineering." Published in the *School*

times. I do not say that the classics will make a dull man bright, nor that a man ignorant of them may not display the highest literary or the highest practical gifts, as indeed many have done. Natural genius can over-leap all deficiencies of training. But a mastery of the literature and history of the ancient world makes every one fitter to excel than he would have been without it, for it widens the horizon, it sets standards unlike our own, it sharpens the edge of critical discrimination, it suggests new lines of constructive thought. It is no doubt more directly helpful to the lawyer or the clergyman or the statesman than it is to the engineer or the banker. But it is useful to all, for the man of affairs gains, like all others, from whatever enables him better to comprehend the world of men around him and to discern the changes that are passing on in it.

Without disparaging the grammatical and philological study of Greek and Latin, the highest value a knowledge of these languages contains seems to me to lie less in familiarity with their forms than in a grasp of ancient life and ancient thought, in an appreciation of the splendor of the poetry they contain, in a sense of what human nature was in days remote from our own. It is for all of us necessary to live for the present and the immediate future. But it is a mistake to live so entirely in the present as we are apt to do in these days, for the power of broad thinking suffers. It is not only the historian who ought to know the past, nor only the philosopher and the statesman who ought to ponder the future and endeavor to divine it by filling his mind with the best thought which the men of old have left to us.

2. FROM JAMES LOEB

Of Kuhn, Loeb & Co., New York; now retired

That a classical course is a valuable training for business life has always seemed to me a self-evident proposition. This question has been discussed often and at great length by those who are much more worthy

Review, Vol. XIV (1906), pp. 389-414; translated into German by Professor Von Arnim, of the University of Vienna, and published, with an introduction by Dr. S. Frankfurter, under the title "Der Wert des Humanismus, insbesondere der klassischen Studien als Vorbereitung für das Studium der Medizin und der Ingenieurkunde vom Standpunkt der Berufe" (4. Heft, Mitteilungen des Vereins der Freunde des humanistischen Gymnasiums, Vienna and Leipzig, 1907).

II. "The Value of Humanistic Studies as a Preparation for the Study of Law." *School Review*, Vol. XV (1907), pp. 409-35.

III. "The Value of Humanistic, Particularly Classical, Studies as a Preparation for the Study of Theology, from the Point of View of the Profession." *School Review*, Vol. XVI (1908), pp. 370-90, 533-37, and 561-79.

A few reprints of Nos. II and III are still to be had; requests (inclosing two-cent stamps) should be addressed to Secretary Jocelyn. The reprints of No. I are exhausted.

of a hearing than I am. If I depart from the habit of years, and venture to send a message to your learned assembly, it is primarily owing to repeated urging. I find my only warrant for so doing in the thought that my personal experience at Harvard University, in business, and now, last but not best, in the pursuit of *res dulciores et humaniores*, gives me a certain perspective that may not be without some interest to the Conference.

It would be a waste of your time and of my energy, were I to try to plead the cause of the Classics. America does not stand alone in its decreasing attention to Greek and Latin. Schoolmasters and university professors in England, France, and Germany make the same complaint. We must not close our eyes to the fact that the prevalent methods of teaching classical literature are largely to blame for this decrease. The dry, pedantic insistence on grammatical and syntactical detail, so usual in high school and university, has driven many a student out of the fold. It is asking too much of even a well-disciplined lad to read *Prometheus* or *Antigone* in this spirit. His eyes must be opened to the human values and to the aesthetic charm of ancient literature; and for this the teacher is often too incapable or too unwilling. I am confident that the younger generation of teachers, who are now coming into their own, and who have "tasted the dragon's blood" in Greece or in Italy, will inject new life into their subjects, or rather, that they will understand how to show forth to their hearers that eternal life and beauty of the Classics which is so often buried under mountains of dry philology.

In an age like ours, where ambitious youth no longer treads the cloistered walk, where "Make Money," "Win Success," "Out-do Croesus" are written in large letters on the blackboard of school, college, and university, usurping the place of the *γνώθι σαυτόν* how can we expect people to find *value* in Homer or Euripides, in Caesar or Catullus?

Success, written with the dollar sign, instead of with the commoner, but more harmless sibilant, is the shibboleth of our day. In his last year's Phi Beta Kappa oration President Woodrow Wilson, of Princeton, said:

Is it not time we stopped asking indulgence for learning and proclaimed its sovereignty? Is it not time that we reminded the college men of this country that they have no right to any distinctive place in any community unless they can show it by intellectual achievement? that if a university is a place for distinction at all, it must be distinguished by conquest of mind?

Splendid! But what does the average undergraduate think of such words as these? "Stuff and nonsense; very pretty in theory, but how do they apply to my case—to me, who want to make a *Success* of my life?"

We have made the path of education too smooth; our young men and women rush over it on the soft cushions of hurrying automobiles. They are no longer forced to face that healthy struggle for knowledge that wearies the body, but refreshes the mind. Why, there are colleges and universities in our land where "original research" is recommended to young

people as a profitable pastime before they know what a bibliography looks like. Most things can be popularized; original research cannot.

Some time ago I had the pleasure of a visit from a quite recent graduate of one of the largest New England universities, who is now taking a classical course at Oxford. This young man, who had distinguished himself on the football field as well as in the classroom, was thought worthy of an appointment to a Rhodes Scholarship. He means to study theology and ultimately to return home as a teacher. Just now classics are his chief pursuit. Our talk happened to drift to an incident in modern history. "Oh," said my young friend, "I know nothing at all of modern history." With the same engaging candor and honesty he protested his complete ignorance of mediaeval history. To my timid suggestion that life at Oxford and the long vacations would give him ample time to make up this regrettable lacuna in his education he archly replied, "Oh, I do not need to know anything about history, because I shall never have to teach it"—Q.D.V.!

The degree of A.B. has been so far cheapened that the graduate of twenty-five years ago reluctantly admits the graduate of today into his intellectual companionship. The elective system has overshot its mark and a decided reaction must soon set in, if we mean to uphold the respectability of a university degree. It may be good business to encourage young men to take their A.B. in three years, but it is bad pedagogics.

The constant and growing abuse of a free choice of subjects is slowly but surely removing the props of solid intellectual achievement. "The distinction that can be gained only by conquest of mind"—to cite President Wilson's well-chosen words once more—is predicated on a much more thorough *general* education than the American undergraduate brings to college. Too much and, above all, too early "specialization" is a great obstacle to his acquiring that broader and fairer culture of two or three generations ago. Conversation among men, and between men and women, is steadily losing those finer qualities which make an exchange of ideas profitable and uplifting. With the absence of respect for authority, which characterizes the youths of today, we are fast losing that respect for the dignity of our own work which alone can give that work real and lasting value. The foolish attempt to keep abreast of the so-called literature of the day, of those morbid, pseudo-psychological novels, the prying and indelicate memoirs—to say nothing of the even more pernicious products of untutored writers—would be impossible, were the taste of our growing youths and maidens formed by a proper study of Greek and Latin literature, the Bible, and the classics of our own and other languages. The applause bestowed on the decadent drama, the vulgar comedy, the immoral and dirty play would turn into hisses, were the audience better acquainted with the works of Aeschylus and Sophocles. Those old tragedies served a great moral purpose by focusing motives and lime-lighting consequences. I venture

to say that the low ebb of our public and business ethics is due, among other things, to the absence of that fear of consequences which the better acquaintance with the dreaded *Moïpa* of the ancients would necessarily beget in our consciousness. And much of what I have said applies to conditions in Europe as well as at home—in lesser degree, however, because Europe's mighty cultural inheritance still serves as a bulwark against the encroachment of these evils.

A thorough groundwork in the fundamentals of real culture, followed by a rigid training in the severer discipline of honest original research, of some sort, is the *sine qua non* of every successful life. Whether that life be devoted to science or letters, to theology or business, matters not. That an intimate acquaintance with Greek and Roman literature is among those fundamentals of real culture need hardly be urged here.

Business cannot be taught theoretically. The real school for business is business itself—the railway shop, the store, the factory, or the bank. "Business colleges," good, bad, or indifferent, abound in our country, and recently Harvard and other universities have thought fit to establish "Schools of Business Administration" and what-not else of the same character. A regrettable misconception—I am bold enough to say it—of the true functions of a university. We need ideals in our country. Shall we print the dollar sign on our Bachelor's degrees and flatter their holders into the vain belief that they are better equipped for money-earning because they have spent less time in learning lessons that mean vastly more for the *inner* life?

I have still to learn of the young man, whose theoretical knowledge of bookkeeping and finance and international exchange secured him better pay, or a position of greater trust, than that given the lad from the public school. A level-headed college graduate is better worth his pay than a fellow who comes from a business college with his head full of dummy exchange operations and make-believe entries on a ledger.

An old friend of mine, who fought in the Civil War, and who still clings fondly to the high-protection fallacy, once said to me, when I had just entered business in 1888, "My dear boy, you know more in theory today than you are likely ever to know in practice." My young graduate pride rebelled at this, but 13 years' experience in very active affairs taught me that the time spent at Harvard studying history of finance, political economy, and international law might as well have been devoted to the classics for all the *practical* value I got out of those worldlier pursuits. Especially would I warn young aspirants for business honors against too close application to political economy. That man is born lazy and selfish, and only works because he must earn his bread, is a painful truth which hardly calls for elaborate discussion or elucidation.

The great and legitimate aim of a business man is to make money, to provide for himself and his family such luxuries and comforts as his taste

and social standing demand. But when a man has reached the goal of his desires, when he has made his pile and wants to enjoy it, then comes the time for the making of the real and only *balance sheet*. Then he must ask himself, "What are my resources, now that I have everything that money can buy? What are my spiritual and intellectual assets? How can I best spend what is left to me of life?" Lucky is the man whose early training fits him for something more than the golf-field, or the tennis-court, and for something better than the gaming-table when his days of business activity are over. He can taste the gentler pleasures that await him in his study and by the blazing hearth-fire. His Sophocles or his Horace or his Catullus will make the winter of life seem like its early spring when the greatest struggle he knew was with the elusive rules of grammar and syntax. This busy world of ours cannot stop: it will always whirl and rush and hustle. But some of us—and the more the better—must learn that on one side of the rushing stream of life lie the peaceful backwaters, in which the clouds and the sun, the shrubs and the birds of the air appear reflected in their true, undistorted image, gently floating in the limpid pool of reverie.

3. FROM WILLIAM SLOANE

President of W. and J. Sloane, New York

An education is a large asset for any man, whatever his calling. His equipment for a life-work is that much better, and I, for one, think that an education, and preferably a classical education, is a distinct advantage to a business man, and will prove to be so in increasing measure as he rises to positions of responsibility and influence in his business or elsewhere. A wider horizon means greater ability to see through complex situations, to understand motives, to measure men; to say nothing of the more intelligent interest in those outside matters which increase general culture in the community, in the state, and in the nation.

An American man of affairs is hardly in the same category with the old-world shopkeeper. He must be well prepared to serve his day and generation in a great variety of ways. He may be called from the counter to the cabinet. The only limitations to success in America are those of capacity. But the great trouble with us is that we are forever looking for the short cut. This characteristic has caused a lack of thoroughness in our educational system which is unfortunate. If a man can skim over history and economics, and a modern language or two, and secure a college degree, he is ill prepared to perform the drudgery of an apprenticeship in business, which after all constitutes the only basis on which to build. [I believe that the slow processes of translation of the Classics (which in my opinion should be compulsory in the academic course for a B.A. degree) make good training for the boy who has chosen a business career.] This is

entirely aside from the advantage, which he will never enjoy again, of communing with the gods. The business man's day is prosaic, the men he meets are as a rule men of little or no schooling. The business principles he finds are not always in accord with his preconceived ideas of honesty; there isn't much art or poetry in it all; and unless he has something to fall back upon, some background to his life and thought, some such continual source of quiet comfort and pleasure as a classical education will afford him, life will be a very empty thing; while business cares and business successes will become such paramount issues with him that the man will be lost in his pursuits.

Again, a business man who has had a classical education cannot fail to remember with reverence and affection those patient, consecrated men who taught him Latin and Greek, and awoke in him a love for the beautiful. Such men as these, with ideals, he perhaps no longer meets in his daily vocation. With the passing years he may have forgotten the very names of the Classics he read at college, but the memory of those days, of those men, of their enthusiasm in their work, has had its effect on the man himself and he is better for it, and I believe a better business man too, for unconsciously he has acquired something which he values as a precious possession, a something which distinguishes him from his fellows and makes him singularly happy in his work.

II. THE STUDY OF THE CLASSICS AS A TRAINING FOR MEN OF AFFAIRS¹

THE HON. JOHN W. FOSTER
Washington, D. C.

My experience in the practice of law and my observation of public affairs have led me to look with regret upon the diminishing interest in our higher institutions of learning in the study of the ancient classics. The modern university spirit seems to tend to the elective system and to study in the scientific and more practical departments of knowledge. I doubt very much whether it is wisest to leave entirely to the immature youth the selection of his course of study. So also it may be better to train and develop the mind in the earlier years than to store it with knowledge, which may well come later. If the university is to maintain its proper place as the seat of higher learning, Greek and Latin should not be relegated to an unimportant position in the curriculum, nor their study discouraged.

¹ Read by President James B. Angell.

History tells us of the unequaled refinement of the Greek race in the days of Pericles. Only a few doubtful and imperfect specimens of the chisel of Phidias and his school remain, and the skill of Apelles' brush is entirely lost to us; but the highest evidence of the art, refinement, and thought of that golden age has come down to us unimpaired in the Greek language, the most perfect achievement of the human race. No better training for the youthful mind can be devised than the study of this language and the mastery of the high and polished thoughts which it has preserved. It matters not if in the resistless hurry of our practical age the Greek which we acquired in our youth passes from our memory; its influence on the mind will never be obliterated.

Lord Brougham, one of the first of English statesmen and scholars of the last century, in his inaugural address as rector of Glasgow University, said:

Be ye assured that the works of the English chisel fall not more short of the wonders of the Acropolis, than the best productions of modern pens fall short of the chaste, finished, nervous, and overwhelming compositions of the Greeks. Be equally sure that, with hardly an exception, the great things of poetry and of eloquence have been done by men who have cultivated the mighty exemplars of Athenian genius with daily and with nightly devotion.

Also that other distinguished English statesman and scholar, than whom no one of his generation was greater master of his own language, Gladstone, wrote:

The modern European civilization from the Middle Ages downward is the compound of two factors—the Christian religion for the soul of man and the Greek discipline for his mind and intellect.

I have been asked to discuss "The Value of the Study of the Ancient Classics as a Training for Men of Affairs." The quotations which I have just made from two of the most prominent men of affairs of the British Empire show the high estimate which they placed upon the study of these classics. Every man at the bar or in public life who was made familiar with the Greek and Latin languages in his early education knows how valuable that study has been to him in his professional career—not on account of the technical knowledge acquired, for that will pass

from his memory unless preserved by constant reference to it—but because of the discipline which the study gave to his youthful mind in its formative state. The mere routine labor of the translation of Greek and Latin authors into one's vernacular, the effort to ascertain their exact meaning and the choice of the words which correctly express that meaning, constitute a mental training which will be invaluable to the future lawyer or public man. True, there is some such training in the acquisition of the modern languages, but not to be compared with the study of the Greek, the most highly refined and perfect of all the languages for the expression of human thought.

I recall my own experience. As a law student and for some time after being admitted to the bar, it was my practice to carry about with me the Latin text of the law maxims extracted from Broom's compilation, in order to memorize them and master the principles therein so concisely and clearly stated. My main object in this exercise was familiarly to acquaint myself with the elementary doctrines of law and government, for practical application in my profession. But the exercise was of inestimable value to me in forming my method of thought and expression. Whatever of conciseness and clearness of style I may possess is to be largely attributed to such study.

Another great value to be derived from a study of these Latin maxims is that they contain the concentrated wisdom of the philosophers, scholars, and publicists of Greece and Rome. We of the English race, in our exaltation of the common law, are apt to forget that the foundation of almost all modern jurisprudence was laid by the jurisconsults of the Roman Empire in the compilation of the civil law, who availed themselves of the vast storehouse of wisdom gathered from more ancient sources.

Even the advocates of the elective curriculum which required no Greek and Latin admit that the study of those languages in the writings of their philosophers, poets, and scholars tends to produce the most cultured minds and the highest style of composition and expression. Amidst the great wealth of material in the ancient classics which has come down to us, none is more useful to the lawyer and the public man than the works of

Demosthenes and Cicero. We are accustomed to look upon them only as orators and authors of treatises, but they were lawyers by profession, and of all the ancients the most successful in their profession of those whose lives we know or whose works have been preserved. And they also, like their brethren of the present day, were led through their profession into public affairs. For a considerable portion of their public life both Demosthenes and Cicero swayed the destinies of Athens and of Rome.

Demosthenes lived about one hundred years after Pericles, but he had in his education the full benefit of the refinement and literature of that age and of the later days of Socrates and Plato. Cicero was educated by the most eminent teachers and philosophers of his day, and he perfected his education in Athens and Asia Minor. Many of the forensic efforts of these two men have been saved from the wreck of time, and are available for the study of lawyers and statesmen. They are conceded to be among the choicest productions of the human mind in force of expression, beauty of style, pure philosophy, juridical wisdom, and statecraft. It is well worth while for our public men to master the Greek and Latin in order to study the productions of these great lawyers, orators, and statesmen in their native tongues, unimpaired in their force and elegance by translation.

I have referred to the training derived from the translation of the dead languages, in the accuracy of expression which it requires, and the habit of searching for the true and exact meaning of the author. This training is of prime importance to all those who have to do with the framing or the interpretation of contracts, charters, statutes, or treaties. It has been deeply impressed upon me in my connection with public affairs. A considerable portion of my official life has been devoted to efforts to reach an understanding of treaty stipulations, which on account of their vague and inexact language have given rise to conflicting interpretations which threatened open hostilities between otherwise friendly powers. The most fruitful source of conflicting interpretation has been the attempt in our treaties with Great Britain to fix our boundaries with Canada and to define our respective rights.

In the treaty of peace and independence of 1783 it was stipulated that in order "that all disputes which might arise in the future on the subject of the boundaries of the said United States may be prevented, it is hereby agreed and declared, that the following are and shall be their boundaries, viz. . . ." But the first attempt to put this stipulation of the treaty into force developed the fact that the language used was so vague and uncertain that, owing to the opposing interpretations, it was impossible to put it into effect; and after much discussion, resort was had to arbitration to determine what was "the true intent" of the treaty as to the initial point of the boundary line. In succeeding years, as efforts were made to establish other portions of the boundary under this treaty, the varying interpretations placed upon its language caused much embarrassment and ill feeling.

The territorial rights of the United States and Canada on the Pacific coast, the discussion of which had caused the campaign cry of "Fifty-four forty or fight," were sought to be settled by the treaty of 1846, but the uncertainty of the language employed for that purpose caused bitter contention, only to be allayed by submitting the conflicting claims to the arbitration of the emperor of Germany to determine "which of these claims is most in accordance with the true interpretation of the treaty." Similar trouble as to the respective rights of the two countries in Alaska arose out of the proper construction to be placed upon the language used in the treaties of 1824 and 1825 between the United States, Russia, and Great Britain, which culminated in the expensive arbitral litigation at Paris in 1893, and at London in 1903.

The most conspicuous illustration of the defective character of treaty language is to be found in the recent agreement of the United States and Great Britain to refer to The Hague Tribunal the meaning of the words used in the stipulations of the treaty of 1818 regulating their respective fishing rights in the Northwest Atlantic waters. After nearly a century of diplomatic correspondence, heated local controversy, and long and elaborated arguments as to the meaning of words, it has been determined to organize at The Hague an international tribunal, before which

the meaning of the words in dispute will be debated by the most learned lawyers of the two nations, and a final determination secured.

It is true that imperfect geographic knowledge has been responsible in some measure for these international misunderstandings, but the greater part of the ill-feeling, arbitral litigation, and expense in these cases could have been avoided, if the negotiators of the treaties had taken more pains or had possessed the capacity to express their intent in more precise and accurate language. This citation of international controversies with our northern neighbors emphasizes the importance of having our diplomatists and our statesmen in the Cabinet and in the Senate who have to do with the making of treaties, well trained and expert in the force of language and the meaning of words. It is the unanimous testimony of educators and professional men that such a training can be best acquired by a patient and thorough study of Greek and Latin.

I heartily re-echo the sentiment heretofore expressed in these Conferences that there may be in this respect a restoration in our universities and colleges of the old condition of things, when the degree of Bachelor of Arts meant classical education.

III. THE STUDY OF LATIN AND GREEK AS A TRAINING FOR PRACTICAL LIFE

CHARLES R. WILLIAMS
Editor of the *Indianapolis News*

The purpose of education, as I conceive it, is to make youth conscious of its vast heritage, and to train its powers so as most effectually to appropriate and use its endowment. It is well constantly to hark back to foundation principles. What are we trying to do in all the process of education from the time we start with the schoolboy, "creeping like snail unwillingly to school," till the university sends him forth, diploma in hand, to take his place in the ranks of active endeavor? We wish as thoroughly and as quickly as possible to bring him into harmony with his intellectual surroundings, to raise him to the present

average of the intelligence of the race, nay, in the university courses, to lift him above the average so that he may hope to be, may be fitted to be, a leader, not a follower in the race; a man that has learned through the mastery of his own powers and inclinations, through the discipline of his own nature, through long association with the best that the world has thought and wrought, to have some adequate conception of life; who has come to "see life steadily and see it whole," or if not quite that, who has had formed in him some desire and aspiration to attain that high and worthy power.

A good share of education, nearly all that can be given to the majority of our youth, is of an essential, necessary character, such as every citizen ought to have. Most pupils are, to say the least, not geniuses, not even talented. All that can be done for them in their school years, it seems to me, is to give them thorough instruction in the essential elements of education and to quicken in them the desire for better things—to give them in some degree the spirit of knowledge, which is "that you must base your conclusions on adequate grounds."

Already when the lads reach the college or university the work of selection has gone far. Generally speaking, only those seek the higher courses of instruction who are above the average intellectually, at least in their desire for knowledge and training or in their aims or ambitions for their mature life. But for the most of the students, even in the higher courses, the spirit of instruction remains the same; only with ampler view, with wider prospect, with larger understanding. The minds are still immature, the accomplishment slight, the discipline of powers partial and often misdirected. It is not knowledge of facts that is needed most, so much as it is grounding in principles, right attitude of mind, training of powers in application, and in appreciation of what is right and good, of what is worthy and best. And along with this there needs to be, if best results are to be attained, constant inculcation, by precept and example, by spirit and power, of honesty of thinking, honesty of speech, honesty of action—the love of truth, the scorn of a lie. To my notion, it is quite as important to have instruction so permeated with the

atmosphere of right purpose, and the love of all things true and honest, and of good report, that its constant endeavor and effect shall be to

teach high thought, and amiable words,
And love of truth, and all that makes a man.

"Three things Yale helped to make William Howard Taft," said President Hadley at the recent notable Yale banquet in New York: "A man, a straightforward man, and a man of high intellectual ideals." He added: "The central problem for our colleges today, is to see that we give the same help and stimulus to those who now come to us."

We have been inclined, especially in the last few decades, to place the greatest stress upon the practical life. Time was in our earlier days when men regarded the pursuit of righteousness as of paramount and dominating interest. Our ideal then, the ideal at least that we loved to exalt and to proclaim, was the life of plain living and high thinking. Is it too much to say that the popular ideal today is rather the life of plain thinking and high living? Does the intellectual life, do the concerns of the spirit bulk as large in our thought, in our approval, as aforetime? Is not it the prevailing sentiment of the youth of the period that the great thing in life is to get on, to lead in material accomplishment, to put money in one's purse?

For years the gospel of strenuosity has been dinned into our ears with inescapable iteration; and we of all peoples, by reason of our temperament and the tendency of our thought, have needed such preaching least of all. The very conditions and opportunities of our life, with a virgin continent to enter into and possess, have set the blood coursing through our veins in a very fever of impetuosity, and made us avid of material conquest and achievement. With so great possibilities demanding development and offering so munificent rewards to those that should succeed, it is no wonder that young men of energy and enterprise and initiative have been impatient to enter the lists and to win their spurs in the sort of activity which the times seemed most highly to regard. It is no wonder, perhaps, that in the swift revolution of thought, the breaking up of old habits

of mind, of old forms of faith, which the marvelous development of science has gendered, and the new mastery of the powers of nature has fostered, it is no wonder, perhaps, I say, that the material side of life has come to occupy so disproportionate a share in the thought and ambitions of the age. Its favors are so obvious and so convenient; it is so good to be lapped in ease, to be luxuriously housed, to be clad in purple and fine linen, to have one's heart's desire!

And so our very education has tended, has it not? to be materialized; has come more and more, has it not? to exalt the immediately useful and practical—the utilitarian—side of instruction. The old college education had at least an ideal of culture. It began somewhere, it proceeded by orderly sequence of courses, through clearly defined territory, toward a definite goal. That goal was trained and disciplined manhood—a mind stored with much knowledge of the sources of our culture; a mind with all its powers, at least somewhat, tested; a mind that had been made conscious of its capacities and of its ignorances, that had been disciplined in the ways of attaining knowledge; a mind brought into some reasonable frame toward the great and obstinate questionings of the soul; and a character established on the eternal foundations of principle and morality. That was the old ideal, as I conceive it. Surely that was a very noble ideal. Of course it was only measurably attained or attainable, but it moved on before the hosts of youth seeking escape from the bondage of immaturity and rusticity, of convention and prejudice, of sensualized desire and low ambitions, a pillar of cloud by day and a pillar of fire by night, leading steadily toward the promised land of the enfranchised human spirit.

But in the multiplicity of courses that the college offers today, in the clamor of appeal of its diverse and divergent departments, what ideal controls and co-ordinates the whole? I trust I speak not in the tone of the hopeless conservative, of the mere *laudator temporis acti*, to whom the old, because it is old, seems good, and the new, because it is new, portends degeneracy. I have not that temper of mind at all, I hope. I know that the colleges and universities are greater and better in unnumbered ways than they

used to be. But what is the ideal of their courses? This I do know, that it is possible in these days of so large freedom of electives for men to graduate with high honors from some of our higher institutions, who with all their equipment of particular knowledge, with all their specialized power, are devoid of culture and possess no philosophy of life. Doubtless they know more about some things than the graduates of the older day knew, but they know less about everything—the universe, the majestic movement of human culture from its far-off sources in the past, increasing with the broadening times, to its present multitudinous volume.

Not infrequently we hear it asserted that it makes little difference what a young man studies, so only that he studies and learns to study in the right way. All roads lead to Rome, we are reminded. So any subject pursued diligently, we are assured, will certainly bring the student to efficient mastery of his intellectual powers. Well, let us freely admit that there is something, nay a good deal in this theory; and yet there is a difference. A student may discipline his mental powers in the study and investigation of subjects which in the end have given him little more than discipline, power for further effort, but that have left in his mind, made part of his soul-life to be the furniture of his thought and the subject of his meditation, almost nothing that he cares to remember, almost nothing that has become of the very texture of his inner life. The range of knowledge is so vast, its lines extend with so many ramifications, interlacing and driving wide apart, to the ends of the world, that no one can ever hope to compass it all; much less in the years of his tutelage. Of course no one line of study is best for the best development of every mind. There must and should be choice and variety to answer the needs of varieties of gifts. The higher institutions have been wise in recognizing this requirement, and so enlarging and enriching their curricula. But, after all, have not they moved too precipitately in this direction? Have not they given to youth, fickle and uncertain in its bent, too great and too early freedom of selection? Have not they allowed specializing and consequent narrowing of intellectual interest to

begin too soon? Have not they, in the flush of zeal for the new learning, gone too far and too fast in encouraging the abandonment of the old ways and the old paths? Does not the experience of the ages of successful tuition after all count for anything? Should not the wisdom of the elders have some weight—far more than it has seemed to have in late years—in guiding, counseling, and directing callow youth in the courses that promise most for their best development?

It does make a difference, a very great and momentous difference, to my notion, what a youth studies in his formative and impressionable years. He is to gain discipline, he is to win mastery over himself, to learn to use his intellectual powers; but if he can attain these necessary ends and at the same time be adding vastly to his spiritual resources, to the comfort of his soul, to the joy of his true life in the years to come, when the cares and responsibilities and distractions of professional and business activity shall absorb his time and energy, should not those subjects for study be preferred which shall enable him most easily to bring about these most desirable results? Let us never long leave out of our thought that life is not mere getting and spending, mere sowing and reaping, mere material success of whatever form. That is only the basis for something better and higher and more enduring.

And so, especially for the young men that hope to be leaders in the professional and business life of the time, in finance and affairs of state—in practical life, in a word—those studies are to be preferred which shall make him more a man, give him a wider outlook, a larger prospect of life, quicken his power of vision, enlarge his range of sympathy and appreciation, and bring him into fullest consciousness of the sources and development of the culture we enjoy. It may be tremendously interesting, to be sure, to be able to determine the distance of the sun from the earth or to measure the diameter of the moon; power of observation and a magnified sense of the miracles of nature's adjustments all about us may doubtless come from microscopic study of the eye of a wasp or of the delicate whorls of a lichen. But, after all, what do such investigations furnish the mind withal besides

the added power except just the facts ascertained? How have they, except in infinitesimal degree, made a man more a man, or helped prepare him for his life among men? And never more than in this age of crowded activities, of enlarging governmental functions, of militant socialistic agitation by half-educated theorists and lop-sided sentimentalists, was there need of men that know the world was not made yesterday nor the day before.

Pope voiced a profound truth when he declared that "the proper study of mankind is man;" and some wise man, whose name I do not now recall, uttered the dictum: "There is nothing noble in the world but man; there is nothing noble in man but mind." Whether or not we accept that as wholly true, we must unquestionably recognize that in it lurks great truth. What man has been, what man is, what he can hope to be—is there any other theme of such enthralling interest, any other field of investigation that can so widen the spiritual horizon, that can exert so humanizing an influence? It embodies the whole accomplishment of the race, in civil society, in religion, in letters, and in art.

And it is into just this field of investigation that the study of the Greek and Latin literatures and politics conducts us with enticing appeal and supreme authority. It is no accident, no assumption of conceit, no pedant's caprice, that named the Greek and Latin courses the Humanities. That title is the expression of exact and suggestive verity. In these courses certainly we are studying humanity in concrete manifestation and in abundant wealth and variety of intellectual and spiritual achievement. While the life presented has all the air of maturity and presupposes antecedent ages of preparation, yet for us it has all "the freshness of the early world." For us it presents the foundations on which our civilization is built, the germ out of which our culture has developed. Our jurisprudence recognizes principles established by the Greek and Roman lawgivers; our municipal administrators could find much to emulate in ancient methods; our philosophers still quote the authority of Socrates and Plato and Aristotle; our literary forms were given to us by the poets and orators and historians that made Greece famous; our art tests itself by comparison with the scanty derelicts of the studios

of antiquity. How can one possibly have appreciation of the higher things in modern life that has made no thorough study of the sources from which these have sprung or in which they have found inspiration?

And there is no way to study these sources so effective as to study them in the original languages. The very fact that the languages are so different from our own, that their content is so remote and alien to present moods, and that therefore progress in their mastery is slow and laborious, adds to their value as disciplinary material and deepens the impression that the knowledge they convey and the wisdom they impart make on the mind and the memory. A man in after-life may forget the declensions and the conjugations, may lose power indeed to read or translate, but the effect of the study on his mental development, the knowledge of men and the world that he thereby gained directly or indirectly, the uplift of soul, the widened vision—these have entered into and become a part of his being, that shall never leave him more. They have helped to give him an understanding of life, a grasp of principles, a consciousness of the solidarity of the race which otherwise he would have failed to gain, or at least to gain so strongly and distinctly. "Will such studies make anachronisms of us?" asks Mr. Lowell, "unfit us for the duties and the business of today? I can recall no writer more truly modern than Montaigne, who was almost more at home in Athens and Rome than in Paris. Yet he was a thrifty manager of his estate and a most competent mayor of Bordeaux."

Unless a student is dull indeed of comprehension he will have learned by his contact with the ancient world, by his pursuit of the Humanities, that the problems of government and sociology, the just division of powers, the distribution of wealth, the relations of classes to one another, the incidence of taxation, and the control of great estates are not new problems peculiar to this age and continent. He will thus be prepared to deal with them with larger intelligence, with wiser patience; he will not be carried away with every wind of doctrine fanned by the flippant but ignorant mountebank of yesterday, nor prone to accept the long-ago rejected but freshly discovered panacea of political or finan-

cial ills proclaimed by insinuating rhetorician or crafty demagogue. He will stand, he must stand by reason of the training he has had, of the wisdom he has absorbed, as a bulwark of defense for the things that are sane and sensible and that experience has proved and approved.

So far I have discussed the general effect and influence on mind and character in fitting a man for leadership in the practical affairs of life, which in my opinion a study of the Humanities is pre-eminently suited to produce; and perhaps I might properly arrest my discussion at this point. But there is another phase of the question, no doubt, of comparatively minor importance, but still in my opinion of great significance, to which I cannot forbear to give attention. No man is well educated, is well fitted for leadership among his fellows, that has not a thorough and easy command of his own language. Language is the instrument of thought, whether we fully agree with the nominalists or not, the instrument of expression, of human relationship. There can be no clear thinking, no adequate expression except by one that has mastery of the instrument of thought and expression. It is hardly possible therefore, to my mind, to exaggerate the importance of inculcating and cultivating the knowledge and power of our native tongue. Indeed the greatest heritage we enjoy is our English language with what it contains. It is the noblest instrument of thought that the human mind has developed, with the possible exception of the ancient Greek. And when we recall the complexities, one might almost venture to say, the perversities, of Greek etymology, one may be permitted to express unqualified preference for our so-called formless speech. At any rate it is acknowledged to be, for all practical purposes, far and away superior to any other modern tongue.

To this transcendent language of ours we owe a profound respect and devotion akin to the feeling of patriotism or loyalty. It is our duty as educated men to do all in our power to maintain its integrity and to preserve its purity. Students ought to be impressed with the thought that the language is not theirs to do with what they will; it is a great patrimony given to them in trust, to be transmitted unimpaired, though perhaps enriched, to

their successors. It is theirs to use, to enjoy, to glory in; but not to abuse, to mutilate, to degrade.

Now, in my opinion, there is no other way by which students can come to so thorough a knowledge of the powers and possibilities of the English language, to working familiarity with its ample vocabulary, to a comprehension of slight distinctions of significance in its profusion of synonyms, to a precise discrimination among its wealth of epithets, and to ease of movement in marshaling word and phrase in orderly formation, that is to be compared with the study of Greek and Latin. Every hour with text and lexicon and grammar, every exercise in classroom, becomes a practice, an experimenting, a successful engagement in what Mrs. Malaprop thought she was saying when she boasted of her aptitude for "a nice derangement of epitaphs." At a period of his development when a student has few thoughts of his own to express, and scant power to express even what thoughts he has, he has placed in his hands a masterpiece of the world's literature couched in alien idiom and surcharged with allusions to customs and traditions and events remote from his cognition or experience. For high thought and strange form and antiquated mode he must find adequate interpretation and expression in his own language. Almost imperceptibly he finds his range of expression amplified; his appreciation of delicate shades of thought quickened; his vocabulary expanding; his sense of the value of words, inherited from the Greek and the Latin, deepened; his ability to think more clearly and to give utterance to his thought with propriety and precision vastly augmented. In all his efforts to translate the classical authors he has been sounding the depths and exploring the heights of his own vernacular. He has been away for the time at any rate from the flippancies and irrelevancies and slang of the campus and the athletic field and drinking large draughts from the well of English undefiled. He may have thought he was only trying to learn Greek and Latin, but all the time he was perfecting himself in the mastery of English, perfecting himself in the power of precise and accurate statement, of adequate and appropriate expression. If any man hopes to be a leader in the practical life of the time

he must have the power to think straight and to give forceful utterance to his thought.

For the man that seeks to be a leader in the practical life of the world the study of the Humanities, of Greek and Latin, is to be recommended and urged, therefore, because of the thorough understanding and mastery of English that it gives; because of the discipline of the intellectual powers it affords, in determining the precise meaning of an author's discourse; because of the knowledge gained of the sources of our own language, our institutions, and our culture; because of the cultivation of taste that comes thereby in all that is high and fine in literature and art; because of the wider vision it gives to the spirit of men, and because it deepens one's sense of the continuity of culture, of the solidarity of the race, of our debt to the past, and so of our obligation to the future. It makes a man more a man, the more he knows of what men aforesaid have borne and done and thought. The most practical man, in the final survey of human life, is the one that puts the emphasis on man and not on practical; who is never too absorbed in the cares and triumphs of life to ask himself soberly now and then: "What shall it profit a man, if he shall gain the whole world, and lose his own soul?"

IV. THE VALUE OF THE STUDY OF GREEK AND LATIN AS A PREPARATION FOR THE STUDY OF SCIENCE

HARVEY W. WILEY

Chief of the Bureau of Chemistry, Washington, D. C.

In this twentieth century, when the world is full of men of affairs, when so much is accomplished in a material sense, when the intellectual power of certain men over their fellow-men is so marked, when our leaders are of such consequence, it is a matter of interest to study every phase of the training of young people, for they will be responsible for the progress we shall make in the future. All of us, teachers and students, workers in every line, are striving to make our work tell in the final result, and not one of us is willing that the precious time of the youth of this generation should be spent on studies that give no

value received at all commensurate with the time spent upon them.

In the general education, which all of us agree should precede the study of the science, art, or profession which is to be a person's life work, such good and broad foundations should be laid that later in life no trained man shall feel that his early training has been essentially defective. That much, at least, we older men owe to those coming after us, for we are supposed to have learned, by our experience as working members of this busy world, what parts of our education have given us the best training for the things we may have accomplished.

To estimate the value of the study of Greek and Latin as a preparation for the study of science, it is well to know what is thought on the subject by men of eminence in the various branches of science. If the matter is passed upon by chemists only, the conclusions to be drawn from opinions rendered would be very different from those to be drawn from the opinions of astronomers exclusively.

As a member of the Committee of Nine of the Classical Association of the Middle West and South, I sent a circular letter to one hundred prominent scientific men in the United States, teachers and others, for the purpose of eliciting information respecting their attitude toward the promotion of classical learning and their estimation of its value. This letter is in part as follows:

I particularly desire to present the matter of classical studies to the scientific men of this country with a view to securing more extended study of the classics as a basis for scientific studies. The great tendency in the past few years has been to eliminate any requirement of classical knowledge from courses in science. I hope that a careful study of these problems will lead to the return, at least in part, to former conditions of qualification.

I feel deeply that a man who proposes to follow a scientific pursuit especially should be well trained in both Latin and Greek. I do not mean that he should become a specialist, but that he should have such a knowledge of these languages as will enable him to appreciate their beauty and utility. I desire to have your views on the following points:

1. What value do you place upon a fair knowledge of the classical languages, especially Latin and Greek, as a basis for scientific studies and activity?

2. What practical utility may such a knowledge of the classical languages be to a scientific man in the active work of his profession?

3. What particular branches of science would be most benefited by such a knowledge?

4. What effect upon the style and clearness of expression will such a knowledge give to a scientific writer or speaker?

5. What practical help will such a knowledge be to the scientific man who is required to learn some modern language in addition to his own?

6. What effect will such a knowledge of the classics have upon the pleasures arising from knowledge rather than its application which may be enjoyed by an active, educated man?

7. At what age in a person's training should the knowledge of the classics above referred to be acquired or the acquirement commenced?

8. What effect would such a knowledge have upon the success of a scientific man in his professional activity?

9. Any miscellaneous or explanatory expressions respecting the value of classical study to scientific life and scientific research.

To this letter thirty-five replies have been received, of which the following is a tabulated summary, as regards the first eight questions:

Replies received	35
Favorable to the study of Latin and Greek.....	14
Unfavorable to the study of Latin and Greek.....	17
Favorable to the study of Latin, but not of Greek....	4

Point 1.—What value do you place upon a fair knowledge of the classical languages, especially Latin and Greek, as a basis for scientific studies and activity?

No value	3
Very little value	4
All knowledge is of some value, therefore Latin and Greek must have some value.....	2
Latin and Greek have little value in comparison with the time needed to acquire a knowledge of them....	3
Training in language is needed, but French and German are better than Latin and Greek.....	3
Latin is valuable, but not Greek.....	4
Helpful	2
Great value	11
Essential	3

Point 2.—What practical utility may such a knowledge of the classical languages be to a scientific man in the active work of his profession?

No specific answer	4
No answer whatever	4
Very little value	9
Practical utility of Latin varies with the nature of the science followed	1
Some knowledge of Latin and Greek is of benefit in making English scientific terms intelligible.....	4
Latin is of great value in obtaining a knowledge of the proper use of English, so necessary to any educated man	2
A student of Latin and Greek really learns syntax while he is studying Latin and Greek. He could do this equally well by studying a modern language and better still by analyzing English authors.....	1
The value of Latin and Greek is the resulting acquaint- ance with English etymology	1
Severe attention to detail which the thorough study of Latin and Greek requires is of value, but strictly scientific studies might give the same result	1
The nomenclature and terminology of science are based on Latin and Greek, hence knowledge of them is very important to a scientific man.....	8

Point 3.—What particular branches of science would be most benefited
by such a knowledge?

No specific answer	7
All sciences	3
Astronomy	1
Biological sciences	6
Botany	3
Chemistry	3
Geology	3
Humanistic sciences	1
Mathematics	1
Medicine	6
Natural history	2
Natural sciences	1
Paleontology	1
Philology	1
Physics	2
Zoölogy	1
No use in any science.....	9
Those sciences in which an elaborate terminology is supposed to be a mark of scientific activity.....	1

NOTE.—Several answers to Point 3 named more than one science. Several left the question blank.

Point 4.—What effect upon the style and clearness of expression will such a knowledge give to a scientific writer or speaker?

No specific reply	5
No influence	8
Often injurious	1
Tends to make the style obscure	2
Depends on personal peculiarities of the man; some people are benefited, others injured.....	2
Teaches grammatical precision	1
Training in English is better than training in Latin or Greek	4
Effect is beneficial	4
Knowledge of classical languages is very important to a scientific man to teach him how to use English with clearness and precision.....	8

Point 5.—What practical help will such a knowledge be to the scientific man who is required to learn some modern language in addition to his own?

No specific reply	4
Effect will be to hinder the acquisition of a modern language	3
Any language training is helpful as a preliminary to other language training	2
A knowledge of Latin is of some value in the acquisition of French and Italian, but this is no motive for the study of Latin and Greek. Such a laborious and indirect approach to modern languages is wasteful in the extreme.....	6
A help in learning any Romance language.....	15
No help in learning German, the most important of modern languages to a scientific man.....	3
English is the best language to study as the basis for another modern language	2

Point 6.—What effect will such a knowledge of the classics have upon the pleasures arising from knowledge rather than its application which may be enjoyed by an active, educated man?

No specific reply	10
All knowledge gives pleasure; there is no special pleasure to be obtained from Latin and Greek classics.....	5
Much more pleasure is found in the great works in modern languages than in the classics in Greek and Latin	5

A source of great pleasure.....	9
A source of pleasure, provided the study of Latin and Greek be carried far enough	4
A knowledge of the classics in Latin and Greek is essential to a broad education.....	2

Point 7.—At what age in a person's training should the knowledge of the classics above referred to be acquired or the acquirement commenced?

No specific reply	8
Should not be acquired at all	1
After French and German have been acquired.....	2
If studied at all, begin as young as possible.....	4
Between 8 and 10	2
Between 11 and 20	3
About the age of 12.....	6
In the secondary schools.....	6
In college	2
Before professional studies are begun.....	1

Point 8.—What effect would such a knowledge have upon the success of a scientific man in his professional activity?

No specific reply.....	9
No effect	6
Little effect	9
Culture value only	1
Many of the best schools have given a very large part of their time to Latin and Greek. Of course the graduates of these schools are better trained than those of poor schools with better programmes.....	1
Advantageous effect on a man's reading, writing, and speaking	2
Effect of drill in careful use of language.....	1
Other things being equal, the botanist with a good classical education is more likely to succeed, because he is less dependent upon others for certain essentials in his science, such as etymologies of words, translation of Latin descriptions, and writing Latin descriptions	1
A man becomes a better popularizer of science.....	1
Classical knowledge is of much value for the success of a scientific man	4

I select some typical replies to Question 9, giving them in full, since in many cases the attitude of the writer to the whole

subject under discussion is most clearly shown in his reply to that question:

J. M. BALDWIN, JOHNS HOPKINS UNIVERSITY

I think the attempt to continue so-called "classical" study in its traditional artificial position is quite useless and unwise. Let it take a place it can hold—one in common with other literary and linguistic groups of studies. To give it great importance in connection with science is a conceit, *me judice*, of its foster-parents.

R. P. BIGELOW, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

To summarize my opinions in the matter of scientific education, it seems to me that the essentials are of two classes: First, a thorough training in the use of the tools required by a scientific man, namely, the modern languages and mathematics; second, a training in the scientific method, especially as applied to the branch of science in which he desires to specialize. If to the curriculum, the study of the classics can be added without interfering with these essentials, then it seems to me that in some cases it would be desirable as a means of culture and enjoyment.

M. T. BOGERT, COLUMBIA UNIVERSITY

No reason for a scientific man to go beyond Caesar and Xenophon. Much more important for a chemist to be familiar with German than Latin, and Italian, French, or Danish than Greek. In fact, I would place the languages in about the following order for an organic chemist: German, English, French, Italian, Danish, Swedish, Latin, Greek, Russian.

G. C. COMSTOCK, WASHBURN OBSERVATORY, UNIVERSITY OF WISCONSIN

The value of the classical languages and their study appears mainly to result from the drill and mental exercise upon a host of constantly recurring small problems and the applications of flexible rules which the diligent student cannot escape, and which are especially adapted to the discipline of immature minds. The initial stages of such study appear to me of much more value for general training than anything which can come after the first three or four years of such work.

J. U. NEF, THE UNIVERSITY OF CHICAGO

I think everyone realizes as he grows older that he has his limitations. I, for one, regret very keenly that I took a great deal of Latin and Greek and did not spend far more time on advanced mathematics and physics. I am, however, not now wasting any time in vain or useless regrets on this account, but simply doing the best I can with the knowledge that I have acquired.

ORMOND STONE, LEANDER MCCORMICK OBSERVATORY, UNIVERSITY OF VIRGINIA

The tendency to eliminate classics as required subjects from courses in science is pedagogically correct. Life is too short for everything.

Modern languages (at least German and French) are essential to the English-speaking man of science.

W. F. OSGOOD, HARVARD UNIVERSITY

I value linguistic training, and I believe that for the English-speaking person German offers all the advantages of Latin—not German crowded into a corner with Latin five hours a week for four school years, but German taught by the ear and by the eye, with thorough schooling in grammar and reinforced a year or two after the start by French, similarly taught, both languages strengthening each other through their comparative study. From such a study come the advantages, first, of the discipline, of the exact knowledge and the intelligent performance of a task well understood; second, of the broadening influence of wider human contact through really seeing something of the thought of other peoples; and, third, of having in our possession a useful tool for our science.

C. R. BARNES, THE UNIVERSITY OF CHICAGO

While I should advise every young man who is going to make a special study of some branch of science to study both Latin and Greek, I should greatly deplore *requiring* either. I do not think it possible to run every scientific intellect into the same preparatory mold.

FLORIAN CAJORI, COLORADO COLLEGE

Modern languages are indispensable. I have seen scientific men who could read their Virgil, but to whom a German book was a sealed book. Their scientific work was seriously hampered.

C. W. DABNEY, UNIVERSITY OF CINCINNATI

I do not know how a man can understand the terminology of science, much less keep up with its literature, unless he has a full knowledge of the classical languages. The scientific man must be able at a glance to know the meaning of all the terms used in science and I do not see how he can do this unless he has a moderate knowledge of Latin and Greek. He needs French and German to keep up with their literature and those languages are, in part, based on the classical languages.

E. S. DANA, YALE UNIVERSITY

I may say in general that my experience has shown that a knowledge of Latin and Greek is of great benefit to the scientific man, particularly in natural history, since without this he is ignorant in regard to the meanings of a considerable part of the scientific vocabulary, and if his work requires him to invent new specific names he has not the basis of knowledge to allow him doing this intelligently. Furthermore, the drill in Latin and Greek translations seems to me one of the best ways of studying the English language and thus training the individual in a clear style.

J. W. MALLET, UNIVERSITY OF VIRGINIA

But in a broader way such a one may well desire to have his share with his fellow-men in the mental strength and enjoyment which a moderate

acquaintance with these tongues opens up in history, in literature, in art, and generally in a knowledge of the mental life of the chief races of men who have before us inhabited the earth. In the selection of subjects with which to fill the time and thoughts of the young during the part of life which can be given to formal training there must of necessity be close instruction within practically attainable limits, and the teacher must constantly keep before him the problem of what best may be *left out*, but in the so-called conflict between classical and scientific studies it may, I think, be truly said, "This should ye have done, and not have left the other undone."

B. OSGOOD PEIRCE, HARVARD UNIVERSITY

I do not regret the years that I spent in school and college (not very willingly at the time) upon Latin and Greek.

EDWARD RENOUF, JOHNS HOPKINS UNIVERSITY

Every scientific man knows what a dismal farce the result of classical instruction in the American preparatory school is, and I do not think it possible for classical instruction to scientific students to be prolonged beyond the second college year. The result obtained at that period, with the material the teachers have to handle, is still pitiable, and, to my mind, of little value, especially if it has lessened (as is usually the case) the time allotted to modern language. I cannot but feel that it is "up to" the teachers of classics. Scientific teachers starting with a freshman—about equivalent to entrance into *Ober-Secunda* of the *Gymnasium*—turn out an average undergraduate product which compares favorably with that turned out in German universities in the same working time from *Real-Gymnasium* graduates.

Why cannot the preparatory school teaching Latin to boys from 12 to 18 equal, or at least approach, the product produced between 12 and 17 by the classical *Gymnasia*? When they do, the questions on this sheet will not be needed—the man with classical training will be the only man who will be practically received as university or college teacher in science, as it is practically in Germany today.

C. O. WHITMAN, UNIVERSITY OF CHICAGO

I have long held that a good knowledge of Latin and Greek is quite essential to the modern man of science. In my own department, the ablest men are without an exception men who have had a thorough classical training. Those who have failed of this show it in inability to express themselves accurately and concisely. They do not have a fine appreciation of the primary meanings of words. . . .

The scientific man must not only know how to use English, but also how to *form new words* for new purposes. Besides, his terminology is made up almost wholly of Latin and Greek derivatives. Over half of our whole vocabulary is founded on Latin. A knowledge of Latin aids immensely also in the learning of French, Italian, Spanish, etc.

The replies to the circular letter have been difficult to classify, considering each one as a whole. Examination of a letter often showed that different parts of it should be classified under different heads. I have endeavored, however, to separate them into two classes. First, those which upon the whole favor classical instruction; and second, those which upon the whole oppose classical instruction; but even with this clear-cut line of demarcation it has been found impossible to make a just distribution in all cases. Some of those which are found in class 1 will contain sections which should be placed in class 2, or vice versa.

The most prominent deduction from a study of the replies is the existence of two schools of thought based upon different premises or points of view. In the one instance there is quite a respectable element among scientific workers and teachers favoring decidedly, or in a limited manner, the requirement of classical instruction for the college degrees. This school believes, as will be seen in the detailed analyses given, that classical studies upon the whole are advantageous to those engaged in scientific work and also contribute to the enjoyment of scientific life. On the other hand, we may class those who are of the very positive opinion that all the time spent in learning dead languages, especially Latin and Greek, is wasted, and that the knowledge which the ordinary student obtains of these languages is not a working knowledge, nor is it of sufficient extent to warrant the belief that it adds anything to the pleasure or to the efficiency of those engaged in scientific pursuits. That such a difference of view would be secured was clearly foreseen. The surprise that has come to me in studying the replies I have received was produced rather by the large amount of testimony in favor of the classics than by that which is opposed to them. In general I think it may be conceded that in so far as actual utility is concerned in scientific research itself, a knowledge of the classical languages is not of any very great importance. On the other hand, in so far as nomenclature of science is concerned, especially biological science, a knowledge of Greek and Latin is almost indispensable. Moreover, it seems to me there is a decided opinion to the effect that a knowledge of the classics is more or

less indispensable to one who claims to be a man of culture and education in the broadest acceptation of those terms.

In regard to the period at which classical studies should begin, the preponderating testimony is in favor of an early commencement. In other words, it is the opinion of most of those who have expressed any conviction at all upon the subject that a good knowledge of classical studies should be acquired during, or even before, the schooling which is designed to fit the young man to enter the freshman class of a good college or university. There is a very decided preponderance of opinion to the effect that the time of the more mature studies, that is of the last three years of the college course and practically the whole of the technical courses in scientific studies, should be free from any special devotion to classical researches.

I may cite as a typical advocate of classical learning the letter received from Professor Bessey of the University of Nebraska. He states in part:

In the management of the department of botany in the University of Nebraska, I require a knowledge of Latin at least, by those who take up the serious study of botany, and I urge such persons to have some knowledge of Greek also. The botanist *must* know something of Latin and he should know something of Greek also. One young man who came to me a number of years ago with a preparation in modern languages only, soon became so convinced of the necessity of a knowledge of Latin and Greek that after entering the University he went back to the beginning of Latin and brought up his knowledge of this language so that he became a critical Latin scholar. He did the same with Greek, and always defended his action on the ground of its being necessary for him in his botanical work. He is now one of the eminent botanists of the country.

As a typical illustration of the attitude of those opposed to classical learning I may give the letter received from Professor Carl Barus of Brown University:

It seems to me little short of ludicrous that anybody at the present age of progress should make an endeavor to reintroduce classical philology, particularly at a time when at such venerable seats of learning as Oxford and Cambridge determined efforts have been made to get rid of this incubus. How is it possible for anybody to fail to realize that the trend of science is ever toward mathematics, that in the next generation the demand for a mathematical equipment and the need of it will be increased

tenfold? How is it possible to ignore the fact that this is the direction in which specialization should be made, beginning at an early age, for the burden is continually heavier, and that this is precisely the direction in which nothing is being done. As for philological work, let us have English, French, German, Italian, etc., which not only have the same cultural value, but open to their possessors a world of life and learning and science. I can't answer your questions for they put me in a temper.

These two letters plainly join the battle between the opposing forces and in neither of them is there any uncertain sound.

Professor McKee, of Lake Forest College, sent a most interesting letter. He states that he is distinctly convinced from experiments he has made that classical studies are a positive disadvantage to scientific students. He finds that students who have come with a knowledge of Latin rather than with a knowledge of German do not rank as high as those who have studied German. This is not a mere opinion but is based upon actual data of the examinations of college students.

Professor Branner, of Leland Stanford Jr. University, does not agree with Professor McKee. He says:

I believe that a systematic examination of the records would show that the men who have the most enduring reputations in the science I know most about are men who have more or less training in the classics.

This may well be true, since the men who have enduring reputations are older men, and the older men were educated at a time when classical training was required and not made optional, as it is at the present time. Even, however, should the records of scientific men show in the future that those who have acquired distinction in sciences are those who have had no classical training, it would not be a proof of the lack of value of classical culture. It is well known that the taste for scientific studies often develops early in life to such an extent as to exclude all desire for the study of any languages, except those necessary to scientific reading and research. Hence it would happen that men with a natural bent for scientific studies would naturally omit the study of classical languages when such a study was not required for college graduation. Upon the whole, it seems to me that the class of data submitted by Professor McKee is likely to be the most reliable. Unfortunately for my own personal

views in the matter, the results of his observations seem to be distinctly unfavorable to the classical scholar. I should not, however, like to rest content with this one instance, but should like to see it supplemented by others. If we think for a moment of the vast number of distinguished men who have already made their mark in science, and recall the fact that practically all of them were well trained in the classics, we would hardly be able to condemn classical studies on the ground that they are positively injurious, as is claimed by many of those who have responded to my inquiries.

My own opinion, partly formed, I must say, before receiving the replies to my circular letter, though somewhat accentuated by reason of these replies, is that it would be a very serious mistake to omit from the higher learning of the United States instruction in classical studies. I believe, on the other hand, that more attention should be paid to these studies, as was the case forty years ago, when it was deemed not possible to have a liberal culture without a knowledge of Latin. I believe that most of the objections to classical studies made by those who have responded to my inquiries would be removed if these studies were begun at an earlier age. I am led to believe after many years of careful consideration of the subject, and as a result of four years of teaching the classics to young college students, and as the result of six years of instruction in the classics received from very competent teachers, that the failure to reach the full value of classical instruction lies essentially in the fact that this instruction is attempted at the wrong time and, to a certain extent, in the wrong manner. The general practice in this country is to defer classical studies until the time a young man begins to prepare for college. While there are many notable exceptions to this, exceptions that are, by the way, the strongest evidence of the pertinence of these remarks, I think it may be demonstrated that four years of classical study, beginning at the age of sixteen, as a rule, would produce no more mastery of these studies than would two or three years of study if commenced at the age of ten or twelve. Youth is the natural period for learning a language. In extreme youth the brain may be regarded as

almost unwritten upon and the sensations which it registers most indelibly are those which pertain to language. If the brain may be regarded as a palimpsest, I think we will all agree that the first inscriptions upon it should be those of language. Mathematics and science and philosophy can be written over words with good effect, but if you try to write a language over the other inscriptions you will have but little success.

THE IDEAL ORGANIZATION OF A SYSTEM OF SECONDARY SCHOOLS TO PROVIDE VOCATIONAL TRAINING¹

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Understanding that my function in opening this consideration of one of the fundamental problems of vocational education is to inspire and focus discussion, I shall take the liberty of pursuing methods most conducive to that end: I shall present and explain a theory of organization for vocational schools in its boldest outlines only, and by statements more or less free from qualification.

The literature of this problem discloses to us that the schemes of organization for a system of vocational education fall into two classes: that class, on the one hand, whose fundamental idea is the introduction of vocational courses into the existing high-school curriculum, and that class, on the other hand, whose fundamental idea is that vocational training should be a continuation, finishing training presented by schools organized separately from the existing high schools. The great majority of schemes fall into the first class and very few of them into the second, for the greater part of the literature I have in mind presents the discussions of educators and nearly every educator recommends a scheme of organization belonging to the first class. If we turn to that small part of the literature presenting the views of business men, we find that the discussions of business men show that the majority of them commend schemes of organization which fall into the second class. This is an interesting alignment, educators on the whole favoring schemes of the first class and business men on the whole favoring schemes of the second class. The difference is probably due to a difference in points of view, an aspect of the subject to which I shall return.

The general scheme which I favor, and which I intend to present this afternoon, is of the second class. While the subject set for our discussion confines our attention to the organization of secondary

¹ Read at the Annual Meeting of the New England Association of Colleges and Preparatory Schools, October, 1908.

schools for vocational training, the principles involved apply to all schools for vocational training, higher as well as secondary. I am, in fact, presenting what is known as the Tuck School Theory, a theory already applied to higher commercial education and one, I believe, applicable to secondary industrial and commercial education.

The ideal system of secondary schools for vocational training should consist of schools organized separately from the secondary schools of the general educational system, which would receive students no longer able to continue their general training and which should provide them a brief, distinctly practical course of training, the object of which should be technical efficiency.

The significant fact in this ideal system is that it accepts the existing system of general education as the basis of its vocational training and builds upon it, but does not attempt to build into it, courses of vocational training. It recognizes the value, more than that, the necessity, of as thorough a general training as possible as a factor in preparation for vocational activity. Furthermore, it places a higher value on general education as an element in vocational training than does the scheme which would provide vocational training by injecting vocational courses into the present high-school curriculum, in that it demands that the existing high-school curriculum remain unchanged (except for changes which may result without any reference to vocational training) and unimpaired by any modification of its aim, and that vocational training be offered by separately organized, specialized, intensely practical institutions.

In another way this ideal organization has the interest of general education more at heart than does that scheme which would provide vocational training by introducing vocational courses into the existing high-school curriculum: it places the emphasis on the general rather than on the vocational training. This may seem paradoxical, but what I mean is this: should we introduce vocational courses into the high-school curriculum, the influence would be to emphasize those courses as against the other, so-called cultural, high-school courses; the tendency would be to induce students who might pursue farther a general training to abandon the pursuit of general training and take up prematurely vocational training. The emphasis should be just the opposite: the system for vocational training should strive to induce students to keep out of it and to continue the general training for as long a period as possible; then, when students have pursued the general training for as long a period as possible, it should welcome

them, with a view to providing them, in a short course, its strictly vocational training.

It may seem inconsistent to recommend the existing system of general education as the basis of a system of vocational training, in view of the fact that the movement for vocational training receives a large part of its impulse from a belief that the secondary education of today is wholly inadequate to train for life. The inconsistency is apparent only, and the apparent inconsistency is removed if we put it in this way: a nation's system of education should have two aims: to develop in each individual on the one hand manhood or womanhood, and on the other hand vocational efficiency. That part of the educational system whose aim is to develop vocational efficiency should receive the youth after the other part of the system has developed in him more perfect manhood or womanhood. If that part of the system whose aim is to develop the man is inefficient for its purpose, it should be reconstructed; that is a distinct educational problem; if that part of the system whose aim is to develop vocational efficiency is inadequate, it should be reconstructed; that is another distinct educational problem. It is not inconsistent for the advocates of a separately organized system of vocational training to build upon a system of general training which is confessedly inadequate; it simply bespeaks their recognition of the fact that that part of the system whose aim is to effect discipline and culture is in process of improvement, and it bespeaks their optimism regarding that improvement.

This recognition of two distinct problems is important, for it explains away another apparent inconsistency: that those who insist that the only really efficient vocational training is the specialized, practical training of separately organized schools, approve, nevertheless, the introduction of manual training and of such courses as commercial geography into secondary schools. The introduction of these courses is not a solving of the problem of vocational training; it is the solving of the problem of making our general system of secondary training broader and richer. Indirectly it aids in the solution of the problem of vocational training in that it improves the foundation for vocational training: directly, however, it is a part of the solution of the other problem, that of making the general secondary training more efficient in developing the capacity for livelihood, by developing many-sided and adaptable individuals. The introduction of new courses into the secondary-school curriculum for the sake of

broadening and enriching that curriculum is not the establishment of a school for vocational training, even though the courses, some of them, be courses that obviously have their place in a scheme for vocational training. The difference between the vocational and the existing secondary school does not consist in a mutual exclusiveness as to the subject-matter taught. In what, then, does it consist?

The difference is a difference in point of view, a difference in motives, in the objects to be accomplished, and in the methods of accomplishing the different objects. This brings us back to a suggestion I have already made, that the reason educators, on the one hand, favor one form of organization for vocational schools, and business men, on the other hand, favor another form of organization, is, that there is a difference between the points of view of the two groups.

The point of view of the teacher, because of his training, his professional inheritance, and especially his contact with young and plastic pupils, is that the function of the school is to develop the many sides of the child. He may be a teacher of English or Greek or history, and of course his immediate desire is to teach the pupil English or Greek or history, but behind and above this immediate desire is the recognition of the fact that he is but one of a number of forces working together to develop, through various instrumentalities, all sides of the pupil intellectually and aesthetically, and—witness the movement for manual training, commercial geography, and so on—to develop the child in adaptability to the practical things of life. His aim is the promotion of "culture," which is in one sense adaptability. The teacher's interest has to be, of course, in the field he is teaching, he must perfect himself in that field, but he has as well an interest in a broader field, that of pedagogy, and this interest is not the lesser one. The nature of the child's mind, the nature of its growth, the differences between individuals, the different ways in which they should be handled pedagogically, these are the primary interests of the teacher of elementary and secondary schools. It is not the development of a special efficiency at which he aims, but of an all-round efficiency which is the foundation for the later development of a special efficiency. A well-developed body, a good digestion, and rich, red blood to feed the brain; a love of nature and a knowledge of things about us; a knowledge of good literature, a love for it and the consequent ability to speak and write purely and effectively; a knowledge of individual and social achievements, of their motives and their consequences; the ability to distinguish the relative values

of things; the appreciation of beauty and the ability to make and do beautiful things; these are the results for which a general system of education should strive, through physical culture, manual training, and the teaching of English, Greek, Latin, history, botany, and other subjects. The aim should not be to teach vocational skill except in the respect that increased general power contributes to vocational skill.

The aim of the teacher, then, is the general development of the pupil. But he is conscious of the criticism of the industrial world that our youth is not industrially efficient; that this general efficiency which our educational system develops does not make itself effective by application through some definite vocational channel. The secondary school, stirred by this criticism, attempts to assume a new function, that of vocational training. The demands of the industrial world must be met, but the teacher does not wish the individual to lose the benefit of cultural training. He recognizes that there is a demand, on the part of some business men, for practical vocational schools whose organization does not presuppose or involve cultural training. So he recommends the addition of vocational subjects to the high-school curriculum; he offers to effect both the general training and the vocational training through the same curriculum.

In so doing the secondary school endangers its own efficiency in its great work, the all-round development of the youth. The moment it attempts to train for livelihood in a particular vocation it weakens its power to train for life. The vocational course which it would introduce, that it may not be a weak, flabby, inefficient thing, must be strong enough to destroy the spirit of the general training. The secondary schools of today should say to the business world: "You criticize the education of youth as vocationally inefficient; we recognize that the criticism is just; our mission, however, is merely to provide the foundation for vocational training; it is your duty to provide institutions for that training; if you do so we will send to those institutions physically and intellectually strong and adaptable youths: do not ask us to assume two aims the spirit of which are mutually destructive: we have problems enough in perfecting our schools that they may train for life without reference to particular vocations."

Instead of saying this, our secondary schools attempt to meet the criticism of vocational inefficiency by assuming the new burden. I believe it to be an error on their part.

But, as I said, although the secondary schools seem ready enough to assume the new burden, business men are not so ready to accept that solution of their problem of vocational inefficiency. They represent the group in favor of separately organized, practical, distinctly vocational schools. The reason is that their point of view, because of their experience with youths and especially because of their demands upon them, is different from that of the educator. Their point of view may be summed up in the words—vocational efficiency.

This vocational efficiency of the business man demands of each individual youth entering his service two things particularly: first, a general keenness, and second, a technical skill in the vocation, a skill not only in the performance of manual operations but also in the performance of mental operations involved—physical agility in doing requisite things and also mental agility in knowing what things to do and when to do them. It is the lack of this second element in vocational efficiency, technical skill, which the business man deplores. So keenly does he feel this lack that he often fails to recognize the value of secondary education as a means of developing the first element and often goes to the extreme of condemning the whole educational system. Therefore the tendency on his part is to favor a system of vocational training extreme in its departure from the existing system of education: he at times feels tempted to leave the existing system to the student preparing for college, and would establish alongside it another system, wholly independent, composed exclusively of vocational courses. Just as the educator, on the one hand, would construct an instrument for vocational training ineffective on its technical side, by introducing a few technical courses into his secondary curriculum, so, on the other hand, some business men, bitter in their experience with grammar-school and high-school graduates, would go to the other extreme, and establish a system of purely technical schools, entirely separate from the general system, receiving students at the earliest age and depriving them of all the cultural benefits of the general training. One extreme is as deplorable as the other. The ideal system of vocational education should meet the demands of both the educator and the business man without going to the extreme suggested by either. Because training which has as its aim discipline and culture should not be joined with training which has as its aim vocational skill, the ideal system of vocational education should utilize the general educational system for the development of disciplined and well-informed raw material, and

should develop vocational skill by a short course of distinctly technical training in specialized professional schools.

The ideal system which I have in mind would operate as follows: By a system of free, compulsory education the state would make it possible for all youths to pursue the general training, whose object is discipline and information, for as long a period as possible, and furthermore, would compel them to do so. But, recognizing that at all stages of the educational system individuals are compelled by circumstances to withdraw and take up life's work, the state, to promote vocational efficiency, should provide, at each stage of withdrawal, specialized vocational schools, whose aim should be a direct, and, in a liberal sense, practical technical training. These specialized schools should be ruled by the spirit, motives, and discipline of the business world; the student, upon entering them, should have left the spirit, motives, and discipline of the general educational system.

In such an ideal system the general educational system would not be impaired by having to carry the burden of training for vocations, and the system of training for vocations would not be weakened by having to carry the burden of training for culture. The greatest industrial efficiency would result. Twelve years of general training, with three of specialized vocational training added, amounts to more, from all points of view, than fifteen years of general training, three-fifteenths of which represents vocational courses scattered through the whole.

On one occasion, after I had outlined such a system of general and vocational training, it was objected that such a system would fail because the state would not know how properly to assign an individual to a course of training for a vocation to which he would be best adapted. I have never been able to see the force of the objection, or even its pertinence. The assignment of an individual to a particular course of vocational training is not necessary in the system suggested, any more than it is now necessary for the state to assign an individual to a classical or scientific course. Such choice should be left to the individual. The state should content itself with offering the opportunity for vocational training.

We have been considering in its larger aspects the relations between the schools for vocational training and the schools of the general educational system. I wish to consider for a time the matter of separate organization of vocational schools, with special reference

to the influence such organization would have upon the efficiency of the vocational training.

The separate organization of the ideal vocational school would consist in at least an administration, faculty, buildings, and equipment separate from those of the general system; as well as separate instruction in identical subjects and especially separate external relationships. In this ideal system the separate organization is complete. I believe that every element of separateness contributes its share toward making for vocational efficiency, either by the creation of a group *esprit* or by making more effective the teaching of strictly vocational subjects.

A word about the importance of group *esprit*. Vocational, or professional, training consists essentially, in some of its aspects, of the creation of a group spirit. What is the meaning of vocation? "The calling or designation to a particular activity," says the dictionary. Society, as a result of its experience, has come to recognize that especial proficiency in any particular activity involves a love for the activity (one must be seized by one's work as by a passion), and that the love for the activity may be in some cases created and in all cases promoted by group association, by artificial situations presenting separateness and exclusiveness. Soldier and Jesuit are historically efficient men: in training them society has taken advantage of the strength that comes from the development of a group spirit. As one may have a call to be a missionary or a minister, as one may have a call to be a doctor or a social-settlement worker, so a youth may have a call to be a mason or a joiner or a textile worker or an office clerk. And he should have a similar pride in his calling; and society, by all instruments at its command, should strive to develop that pride. The exclusiveness of distinct organization, of distinct ideals, of distinct privileges and distinct obligations tends to develop that pride.

The giving of individuality to vocational schools by separateness of organization, tends to develop efficiency in the student in other ways than by the influence of the idea of separateness on the mind of the student.

In the first place, the separate building and separate equipment make possible not only the adaptation of the building and equipment to the particular methods of instruction most desirable for the development of vocational efficiency, but it makes possible also the creation of an atmosphere industrial rather than academic in its

nature. The building should provide for a comprehensive commercial museum, containing not only specimens of raw material and finished products, models of machines, and illustrations of industrial processes, but also specimens of office equipment, blanks, forms, and devices. The museum should be a live thing, creating an atmosphere of business in the building. It should resemble a trade or business man's fair. The walls of the building should be hung with maps, charts, and illustrations pertaining to industrial matters. The building and equipment should be such as to create a peculiar atmosphere; the student or visitor in entering should not be made to feel that he has entered a school at all.

In the second place, the spirit resulting from a separate organization makes possible a distinct discipline. The attitude of the average student in the secondary school, and in the college, is that of the perfunctory meeting of requirements: the attitude that the business man wants is that of a willingness to give more than the letter of the contract demands. It is true that many young men take up business service with the spirit of the perfunctory performances of services only—that is one of the characteristics of the product of secondary education that makes the business man impatient. One of the objects of vocational schools should be the destruction of this spirit; the destruction of this spirit may be accomplished by the discipline of the vocational school; the discipline of the vocational school can accomplish it, not by main force, but only by unobtrusively taking advantage of the *esprit* to which I have called attention.

In the third place, the separate organization makes possible a corps of instructors possessing two very important characteristics—a special knowledge of the vocational subjects taught and a group spirit similar to that which it is desirable to develop in the student body. The teachers in the vocational schools are not to be trained in the ordinary way; they must be the product of our general system of education, and the more extended and thorough the training by that system, the better; but they must have in addition a special training in the particular subjects they are to teach, the training of experience in the business world. The training of the general educational system is necessary to give them great knowledge and great power; the training of business experience is necessary to give them the divine fire.

In the fourth place, the separate organization makes possible a brief, compact course of purely vocational subjects. I think this of

great importance, in a school whose aim is not to develop the many-sided man, but to develop to a high degree of efficiency a particular side of a man. There is hardly an instructor in any school, for instance, who would not agree to turn out more efficient students in a particular field, were he allowed to concentrate fifty-four recitations in nine weeks instead of scattering them through eighteen weeks. From the point of view of the individual's training as a whole this might not be desirable; from the point of view of turning out a good scholar in a particular subject it is desirable. And that is just the difference between general education and vocational training; one aims to develop a general power; the other to develop a particular power.

In the fifth place, the separate organization would make possible external relations on the part of the vocational schools not possible or desirable for schools of the general educational system. I have in mind definite relations with employer on the one hand and with labor on the other.

Those of us interested in this matter of vocational training have heard a great deal about the disappearance of the apprenticeship system; that is one of the chief reasons advanced for the establishment of schools for vocational training. The apprenticeship system, as we know it historically, has disappeared; it was inevitable that that apprenticeship system should disappear with the evolution of modern industrial society. But there has come to me of late an idea which has become a conviction, that there exists in the present situation the possibility of a new apprenticeship system; that there may arise a new apprenticeship system which will take the form of a definite relation between vocational schools on the one hand and employers and labor on the other. This is too large a subject for consideration here, and I can offer only a few suggestions.

It has been my experience, as a mediator between Tuck School graduates seeking positions and business firms, that business firms recognize the value of special vocational training, but that they also recognize that there is somewhat of an adjustment necessary between the graduate of a vocational school and business life. This adjustment takes the form of a brief term of service, at low salary, with the firm accepting the applicant. Two aspects of this term of service are important—one is that it is necessary at all, the other is that it is shorter for Tuck School graduates than for the average college graduates. Now this is a form of apprenticeship; in corresponding

with business firms the term apprenticeship is frequently used by them as best describing the service. A part of the results of apprenticeship is secured by the vocational training, as indicated by the fact that the apprenticeship period with the firm is shortened; the other part is secured by actual service with the firm.

There is no reason why the same understanding which is arising between the Tuck School and business firms may not arise, and take a definite form of organization, between vocational schools in general and the business world. An engineering school sends its men out for service in the field; forestry schools send their men out for service in the woods; the trade schools established by Professor Hanus' commission, many of them, provide for students who at the same time work in shops. This apprenticeship seems to be a necessary part of vocational training. And it exists in most effective form in connection with specialized, separately organized schools, because it is between such schools only and the business world that definite apprenticeship relations can be established.

In conclusion I wish to comment upon some of the arguments which are advanced in opposition to this ideal system of separately organized, intensely practical vocational schools.

A first criticism is that separately organized vocational schools, unless they are to have a large proportion of cultural courses, would deprive the youth of the general training, and general training is of more importance than special training. If it is proposed to meet this criticism by putting a large number of cultural courses into the vocational school, why go to the trouble, when the same thing can be accomplished by putting vocational courses into the high school of the established educational system?

The ideal system which has been advocated in this address does not propose to weaken the established high school by putting into it vocational courses, and does not propose to weaken the vocational school by putting into it cultural courses. It meets the criticism by insisting that its students shall have secured a general training in the established schools, for as long a period as possible and as thoroughly as possible, before they shall enter the specialized vocational school.

A second criticism of the separately organized vocational school is that it ostracizes its students, and the manner in which classical-course students in high schools look down upon commercial-course students is cited as evidence. This argument against separately organized vocational schools is exasperating, for the very attitude

toward students of commercial courses cited in evidence is the result of a consciousness of the fact that the commercial course, organized by introducing practical courses into the high school, is a commercial course in name only and is usually in fact an attractive, easy course for mentally inferior or lazy students. Given the separately organized vocational school, with its business-trained and business-like corps of instructors, and with instructors and students voluntarily submitting to a driving discipline made possible by the interest of all concerned, demanding of the general educational system well-trained raw material, and maintaining a high standard of excellence; given such a vocational school, might not the sense of inferiority be with the other group of students?

Another criticism is, that some of the subjects that would be taught in the intensely practical curriculum of a vocational school are identical with subjects taught in the established high school—English composition, for instance—and to duplicate these courses would involve a wasteful expenditure.

The weakness of this criticism is, that really there is no duplication. The criterion of duplication is found in the aims of the courses to be compared and in the methods of conducting them, not in their titles. A course in English composition, the purpose of which is to teach prospective workers how to write business letters and make intelligible reports, should be quite different from the conventional course in English composition. I have known students to make good records in English composition and still be unable to write a business letter, correct in content, form, grammar, and spelling. In fact, this matter of writing good letters and good reports is so important in business affairs, that a vocational school is justified in meeting any possible necessary expense in training its students to write correctly such documents as are peculiar to vocational activity.

The fourth criticism of the system of separately organized vocational schools which has come to my attention is, that the establishment of such a system would be too expensive; that it would be more economical to go only to the additional expense of introducing necessary vocational courses into the established high-school curriculum. Too expensive! Have not schoolmasters learned one of the cardinal principles of modern business management, that expense is a relative thing, and is to be measured in terms of the return for the expenditure? Accepting this conception of the meaning of expensive, to assert that a system of separately organized schools is too ex-

pensive is to beg the question, for it throws us back on to the main proposition. What are the relative returns in vocational efficiency of the two systems of organization? The fact that the business man, who is a keen judge of returns for capital expenditure, seems to favor, so far as business publications indicate, the separately organized school, is a sufficient reply to this criticism.

The reason, I imagine, why the superintendent of schools is inclined to offer this criticism is, that he looks at it from the narrow point of view of local conditions, rather than from the point of view of national conditions. "If there are to be commercial schools, we must have one," he says to himself with a laudable feeling of friendly rivalry. He canvasses the situation and finds that his community cannot afford a separately organized school. He is in error in failing to realize there need not be a vocational school side by side with every high school of our educational system. Specialized training involves a smaller number of individuals than general training. It would take a number of grammar schools to fill one vocational high school. As the area of jurisdiction of the state is to the area of jurisdiction of the county, so should be the area of service of the vocational high school to the area of service of the grammar school.

Finally, a criticism least worthy of attention, but most symptomatic of the American state of mind, is expressed in the following words: "The need for vocational training is not so pressing but that the modified high school is a sufficient departure for the present." O American Complacency! Is any system of vocational schools worthy the efforts of organization, that is not, in the light which is bestowed upon us, the most efficient that can be devised?

VOCATIONAL TRAINING IN LARGE CITIES ¹

WILLIAM ORR

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There are several statements in the paper we have just heard, which make such a sharp distinction between the conception of vocational training and the conception of general training, that I am taking the opportunity to discuss those points very briefly before entering on what I have to say upon this subject, as viewed from the standpoint of one who is dealing with actual conditions in a large city. I feel very grateful to Professor Person for the clear way in which he has presented the subject. There is so much vagueness, so much befogging of the issue, as regards vocational training, that it is a great satisfaction, a wonderful help in thinking, to have the matter brought before us in this fashion.

Professor Person speaks of the atmosphere of the general school as being that of perfunctory performance of duty. A school of which that is true is not entitled to the name of a school, because there must be back of all the work of any school that is worthy of the name a certain amount of interest and enthusiasm. If it is true, that the vocational school is to stand for enthusiastic endeavor and the general school is for the doing of tasks because they have to be done, we face a most sweeping indictment against the existing American system of education. Another statement is that the vocational school stands by itself in this ideal scheme and the general school by itself, with no connection, no action and reaction, between the two. This would seem to be an impossibility. You send a current of electricity through one wire, and the wire that lies alongside, even though there be no connection, is affected by the process we call induction, and in our American system of education, closely related as the different parts must be, you cannot develop along a certain line without the other parts of the system feeling the effects. My own judgment is, that as vocational training comes to be, it will affect most powerfully and most helpfully the general training, because vocational training by reason of its specific nature must define

¹ Read at the annual meeting of the New England Association of Colleges and Preparatory Schools, October, 1908.

its purpose clearly, and there will be an urgency upon all schools to define their aims clearly. The system we have heard outlined is in many respects like that which has been built up in Germany, and the results of the German system certainly testify to its value and efficiency. There might be an interrogation at this point as to whether, with the different social, economic, and political conditions of this country, a scheme of the kind can be worked out exactly according to the ideal plan as presented.

One other question, relating to the domain of psychology, into which I will not enter, is as to the use of the terms "special capacity" and "general capacity." You can have specific skill, special skill. Whether there is such a thing as special capacity is a question that I would like to have considered by those who are versed in psychological study.

Now as regards the use of English, it is said that the graduate of the high school goes out unable to write a good business letter. Is it necessary to wait until we have vocational schools to secure results in the training in English? It certainly should be possible for one who is trained in the English work of a grammar school to know how to put into correct form a letter, and in the high school the ability should be given to arrange ideas coherently and in such order that the letter would pass muster before the critical eye of a business man. The business man, to be sure, judges by a different standard from the school man, and sometimes his judgment is hasty and he is caught in his own net. An illustration came to my attention a year or two ago in the city of Springfield, where a merchant was taking the schools to task because the young men and women who came in to work in his store during the holiday season were not adept in accounts. He said, "No one of those boys or girls can add up a series of figures correctly." The gentleman to whom he was speaking said, "You cannot do that yourself, my dear sir." The man was thrown off his guard and a little bit out of temper. He said, "Try me and see." His friend gave him a comparatively simple sum, and in the second column the business man made a mistake. He did not have the power of adaptation to meet a somewhat novel situation.

The question of expense, which the paper discussed in such a delightfully optimistic way, is one unfortunately that we must face in a very hard, practical fashion. Resources are not unlimited. And this is one reason why we need, in Massachusetts at least, I don't

know how it may be in New Hampshire, all the wisdom and public spirit that we can bring to bear upon this question. There is great danger of a chaotic, unsatisfactory condition of things resulting from rash experimentation. Towns are limited in their means, some of them hard put to meet the expenses they are under at present. High schools are finding it difficult to carry out their present programmes. We cannot have too much of administrative skill, business foresight, and knowledge of the whole situation and the factors involved in order to work out this problem, to conserve what there is in the present system, to improve it as the need shall be, to introduce vocational training for boys and girls, for young men and women, and at the same time keep our general instruction strong, sane, and sound. I do not know of a more urgent, more difficult, and more important problem that has faced the educational authorities of the state.

In Springfield, to come more directly to the topic of which I am to speak, the head masters of both grammar and high schools some months ago made a careful study of the conditions as regards vocational training or industrial training in that city. It was a study of the pupil and his needs, the proper function of the schoolmaster. We found that in the elementary schools there were 801 pupils of the age of 14, 417 of the age of 15, 104 of the age of 16, 34 of the age of 17, 7 of the age of 18—the ages are averages—a total of 1,423 pupils 14 years or over. These data showed that pupils were staying too long in the elementary schools, and for some reason or other were not advancing as rapidly as they should. It was also found that the school population of 14 to 16 could be classified as follows: In a total of 2,641, 15 per cent., or 427, were in the high school; 1,218, or 47 per cent., in the elementary; 268, or 10 per cent., in the parochial and private, and 727, or 28 per cent., not in any school. Over 700 boys and girls at that important time of life were losing the benefit of discipline and training, and were drifting into the world with no special skill for any vocation.

It further appeared from our study that the high schools do not reach a large element of the youth of the city. An examination of the school returns for the last five years shows that out of a given group of children entering the elementary course only one-third of the number made the high school; in other words, 70 per cent. finished their schooling in the ninth grade or lower. Certainly the state is not ministering to the real needs of a very large element of its

youth. You will also recall the figures made up by the state industrial commission, in which they estimate that there are 25,000 children in the state who are thus turned out to shift for themselves, without any special aptitude, and without any special interest. They recruit the drifting element in our population, the "floaters" of our industrial society, as dangerous an element as the "floaters" of the political world. If you study the boys and girls who thus go out you will see that the meaning of life has not come home to them. They have no large interests. They secure employment somewhere by chance. The job is usually not one to which the boy or the girl is adapted. The youth finds he is not a success. He goes somewhere else, and so for two or three years shifts from one position to another, with small returns in the shape of wages, with little satisfaction, and finally settles down in some shop or store and becomes a wage-earner, doing the most perfunctory kind of work. Such an experience does not contribute to the best returns in life, and the best efficiency in service.

I was interested in connection with this topic, to look up the statistics of children under sixteen who were employed in different establishments. These figures are in *Bulletin 53, Census of Manufactures, Census of 1905 for Massachusetts*, under the auspices of the Department of Commerce and Labor, Bureau of the Census, S. N. D. North, Director. It is issued from the Government Printing Office in Washington. The census was taken three years ago, and the figures cannot have changed very much since then. According to this report children under sixteen employed in the state numbered 14,000—the round numbers—with wages of something over \$3,000,000, an average of about \$230 a year, or 70 cents a day. An interesting comparison is that between urban communities and rural places in respect to child employment, for it is fair to say that one under 16 is a child in all matters of development. Out of these 14,000, 12,000 approximately were in urban communities and 2,000 in country towns. In 1900 there were approximately 10,000 child workers in cities, an increase of 24 per cent. In rural communities there were 2,408 in 1905, and 2,406 in 1900, practically no increase. The tendency is for child labor to increase in the great cities, as we might assume, a priori, to be the case. Wages for child labor in the rural community, on the basis of the figures handed in, seem to be somewhat larger than in the case of the city. In 1905, the average yearly wage was \$250, a decided increase since 1900.

These figures are by no means complete. You can understand that in view of the present laws regarding the employment of child labor, manufacturers in many cases will evade giving returns, and it is entirely possible that the number of children under sixteen employed in our various industries is larger than the census shows. In Springfield 300 children are reported. The number must be greater. Boston returns only 867, Brockton 103, Fall River 1,241. You will notice that the large manufacturing places have more children of sixteen and under employed than in the case of the residence communities. This we might assume to be the case at the outset, without the figures before us. Gloucester, for example, reports 25 children, Holyoke 1,067, Lawrence 1,172, Lowell 1,512, New Bedford 954, Somerville 41, Worcester 616.

So the question comes, what is the state going to do with this great floating population of youth? How are these children to be kept longer in school? How are they to be fitted so as to play their parts in life more efficiently, with greater satisfaction to themselves, with greater surety and safety to the community? The suggestion was made in Springfield, that the boys, and to some extent, the girls, who leave school early are repelled because the courses deal largely with book subjects, and are presented in strictly academic fashion. The boys in many cases had interests along mechanical lines; and an opportunity to do something in a directly practical way as regards an industry would appeal to many of those for whom the existing courses had no particular interest. It was urged that in the upper grades of the grammar schools, taking advantage of the shops there existing, because Springfield is well provided in that direction, there should be established industrial classes for both boys and girls, and that the grammar masters select from pupils such boys and girls as showed aptitude in practical lines and who did not have interest in existing courses, and transfer these pupils to this industrial course. This course was to contain the simple elements of arithmetic, English, science, and other subjects of the grammar schools, to be taught in a direct, practical fashion, and, in addition, a large amount of industrial work on the side of domestic science for the girls, and manual training, shopwork, and drawing for the boys, with the possible introduction of the rudiments of certain trades. Means are not available at present for carrying out such a project but the grammar masters, without exception, were in favor of the plan as an aid in keeping children longer in school and leading them up to a distinct-

ively vocational training. We have not yet reached the point where we can see how vocational training itself can be brought into our schools.

The above plan deals with elementary grades only. As for the high school, a master who knows his pupils understands that many fall out and drift into life, just as the young boys and girls do, without any specific aim. There should be correlated with the high school, courses into which pupils of this kind could be inducted. I do not agree with the previous speaker in leaving the choice entirely to the pupil. When I was in England in 1905, I heard of a unique society, undertaken as a commercial enterprise. It is called the Future Careers Company, and its business is to instruct parents—not perhaps instruct, that is a little too strong a word, but to advise parents as to the capacities of their children, so that mistakes might not be made in the taking-up of a life-work. Every teacher who is wide-awake to his pupils' capacity can help them in making the choices that determine success or failure. There are certain broad generalities, at least, that may be followed, even if we do not go into particularities. And so I conceive of no more important duty falling upon the teacher in the high school, when we have this system of vocational training established, than picking out this boy, that boy, and putting him in the way of life most likely to lead to success. It is important for the boy, it is fully as important for the community and for the state. Many instances are in mind where such pupils could have been brought into a much more effective relation to life, and to live with more satisfaction to themselves, if such practical schooling were provided. So there must be a close correlation between the existing system of instruction and that which shall be established under the name of vocational schools.

One thing is clear, that our American system of education, which we have so vaunted, and of which we are so proud, is as yet far short of what it should be in width and range of opportunity. When one reads such a publication as this issued from the Department of Commerce and Labor, *The Special Consular Report upon Industrial Education in Germany*, and sees what that country, by no means as wealthy as our own, struggling against much that is a positive hindrance to her success industrially, in the shape of a large army, and with not a tithe of our national resources, is doing in promoting, as far as possible, the efficiency of every child, by maintaining a magnificent system of general education, when one contemplates the

vast variety of her industrial schools, the multifarious ways in which they are connected with the general system of instruction, there is realization of how much there is for us to learn. Most surely the excuse of not enough money—and here I am on Professor Person's ground—is utter hypocrisy. Go into any city of this country and see how much is spent for needless luxuries! See the amount wasted through poor administration! Then calculate the enormous returns that will come through industrial training of our youth and it must be admitted that here is plenty of money to equip such schools, to erect buildings, and to provide teaching force. Only we must in fairness to the community consider how to spend this money most wisely and most effectively.

In large areas in Massachusetts we cannot hope to establish special schools for special trades in every town. They have not done this in Germany. The distribution of their trade schools is suggestive. To make a local application, when you speak of Lynn you think of the shoe industry; when you speak of Lowell, textiles; Holyoke, paper and textiles; Fall River, textiles. So there must be kept in mind the specific needs of each community. It certainly would be folly to establish the same kind of a special vocational school in a country town as in a manufacturing city. Hence the need of careful planning and adjustment. It is interesting to see that beginnings are being made in this direction, although I do not know as yet of any vocational school that meets the definition given by Professor Person. The Smith School, in Northampton, has agriculture, industrial, and domestic science courses; there is an agriculture high school at Petersham. Other instances could be given of special schools in particular districts, promising ventures in the field of vocational training.

Some things have been done in Springfield in the way of vocational training in the high schools, and statements from those who are directly in charge of the work may be of interest. In anticipation of this meeting I asked the principal of the technical high school to send me his views on certain subjects and topics regarding that school. A letter was also sent to the head of the commercial department in the technical high school. The inquiries were as follows:

"To what extent is direct vocational training given in the Springfield Technical High School?" The answer is: "If by direct vocational training you mean definite or special vocational training along some-

what narrow lines such as would be given in a trade school, I should say that *that* is not at present given in the Technical High School even in the commercial department which, however, comes perhaps the nearest to giving direct vocational training of any of our departments. In my judgment such specific, special, narrow, direct vocational training should be reserved for trade schools and not given in high schools."

The next question: "In what way does the work in the shops and mechanical drawing promote vocational skill?" "The *main* object of the work in our shops and in our mechanical drawing department is not to promote skill which may be applied vocationally, but to awaken, stimulate, and expand native mechanical ability in a broad way, to give knowledge of fundamental principles of modern methods of design and construction, to show the applications of the common branches of high-school study in the mechanical and applied arts, to do everything that can be done in four years of high-school life for a boy or girl who is to live under present-day social and economic conditions, though in what capacity he or she is to live we do not assume to know. Whatever skill or vocational training comes out of this process (and there must be some—in some cases a good deal) is incidental, however valuable it may be. With some pupils the vocational motive is a considerable factor."

Another question was: "What per cent. of boys in each class graduated during the last ten years from the Technical High School has entered upon direct mechanical work?" It might be said that the school started in 1898, and by 1903 was well under way. Of the graduates since 1903, "7 per cent. have already completed their education in technical colleges; 21 per cent. are now in such schools; 33 per cent. are employed as draftsmen, 6 per cent. as machinists, 2 per cent. as pattern-makers; 7 per cent. are directing mechanical work and have men under them; 14 per cent. are doing clerical work connected with manufacturing enterprises; 6 per cent. are teaching in technical schools; the remaining 20 per cent. found their school training of general rather than of vocational value."

Here are some of the occupations into which these pupils have gone.

"Students"—which refers to those in the technical schools—"draftsmen, machinists, pattern makers, assistant master mechanics, foremen in charge of construction work, electrical contractors, steel inspectors, electricians, civil engineers, mechanical engineers, loco-

motive firemen, teachers, chauffeurs, telegraph operators, car tracers, stenographers, bookkeepers, shipping clerks, manufacturers' clerks, time-keepers, salesmen, letter carriers, grocers' clerks. Forty-five per cent. of these graduates are employed in mechanical work."

The figures regarding pay must be of interest. The class of 1903 at the outset began with a wage of \$8.65 a week; 1904, \$8.34; 1905, \$7.50; 1906, \$9.83; 1907, \$8.90. I suppose the decline from \$9.83 to \$8.90 is due to the business depression. The lowest present wages received are \$4 per week, and the highest \$50 per week, the average being \$15.45.

The commercial department has been in operation for ten years. Two years ago it was transferred from the Central High School to the Technical High School. The first question was as to the extent to which direct vocational training is given in the commercial department. "Pupils in the commercial department are required to take 20 hours of work per week, and of this work almost exactly 25 per cent. is direct vocational training." I have an impression that it is somewhat larger, because the instruction in English is with a view to the needs of business people. "The pupils who graduate from the commercial department are fitted to be bookkeepers and stenographers. Of course, this does not mean that they are ready to do the work of experienced men and women, but that they are prepared to fill subordinate positions in these lines.

"Without question, a commercial course should prepare its graduates for vocations.

"Of the pupils who have graduated from the commercial department during the last ten years, 96 per cent. of the boys and 88 per cent. of the girls have entered upon direct vocational work."

It has been a great satisfaction to keep in touch with the commercial department, which was for a time in the school with which I am connected. The business men of the community have the utmost confidence in the judgment of the head of that department, not only in regard to the specific skill of the boy, but as to his general ability, and it is no unusual experience to receive more calls for pupils than can be met. The school, even if it is not constructed on ideal lines, is meeting the needs of the business community of Springfield. It, however, combines general work with this vocational work.

The following statements regarding employment are in answer to the question: "Have the results justified the introduction of the

commercial course in Springfield? Do the graduates find employment readily?" During the fall of 1907 a questionnaire was sent to each graduate of the commercial department, in order to obtain exact information concerning employment and earnings of the young men graduates. The total number was 76. So the answers applied to those of some standing and experience. Of these 76, the number employed in business for self 4, in business with father 2, working for others 56, a total of 62; 1 in college, 1 ill, 2 out of work, and 10 who did not reply. Out of the 76, 62 were accounted for as actually employed in some establishment. It is known, further, that of the ten who did not reply, five are in good positions, so that out of 76 at least 67 are actually at work on the lines for which the school made some preparation. Of the young women 151 graduated. You notice the larger proportion of young women. Of these, 106 in business offices, 3 teaching, 2 in school, 3 at home, 2 ill, 6 unemployed, 20 married, and 9 who did not reply. Of the nine who did not reply one is married and three have good positions, but the whereabouts of the other five are not known. The earnings show that there is decided advantage for the graduate of such a course as against one who goes into business without special training.

There is, of course, a period of preliminary experience of which Professor Person spoke, and it is in the mind of those in charge of this course that with the instruction in bookkeeping, in stenography, in the work of a salesman, and of a general clerk, there must be left a certain margin in the pupil's intelligence for the business man to fill with his specific requirements. It is unfortunate for a high-school graduate to enter a business establishment with the impression that he can teach the manufacturer or the manager how to keep books. And so the young man is taught among other things to be very humble in his attitude at the outset, and to be a learner even after he has left school.

It would be interesting, if there were time, to critically examine the above figures, but one or two quotations from statements of business men in the city will help to show their significance. A large publishing house says: "We have had experience in hiring many stenographers, especially during the past few years, and whenever we are not obliged to fill a place with a stenographer who has had several years' actual office experience we always try to get a graduate of the Springfield High School." The reference is to the commercial course. This is the statement of a mercantile house:

"Without exception all have given entire satisfaction. Their work shows thorough training, not only in the capacity of stenographers, but in the little details which do so much to make office work run smoothly. They show thorough training not only in their designated work, but also good evidence of good mental training outside of this." I hope you will understand I do not read those extracts with the intention of lauding the commercial department of the high school, but simply to show that in a general way there can be much done, even under our present imperfect system of organization, to fit young people for entering upon the actual work of life.

In my researches in this subject I came across the utterance of the German emperor in 1890 at the great conference of secondary schools, and I am sure there are texts in this utterance on which many sermons might be preached to American schoolmasters. The criticism would be not against lacks in our organization, but against defects in methods and aims.

The course of training in our schools is defective in many ways. The chief reason is that since the year 1870 the classical philologists have been lodged in the Gymnasium as *beati possidentes*, and have laid the chief emphasis on the subject-matter of instruction—on learning and knowing—not on the formation of character and on the actual needs of life. . . . The demands made in the examinations show that less stress is laid on practical ability than on knowledge. The underlying principle of this is that the scholar must, above all things, know as much as possible; whether that knowledge fits the actual needs of after life is a secondary consideration. If one talks with one of these gentlemen and tries to explain to him that the youth must in some measure be practically equipped at school for actual life and its problems, the invariable reply is that such is not the mission of the school, that its chief concern is for the training of the mind (*die Gymnastic des Geistes*), and that, if this training of the mind is rightly ordered, the young man is placed in a position by means of it to undertake all the necessary tasks of life. I think that we cannot go on acting from that point of view any longer. . . . I am well aware that in many circles I am regarded as a fanatical enemy of the older classical education, and that my views are oft quoted in support of other forms of school training. But this is a mistake. Anyone who has been at a Gymnasium, and has seen behind the scenes, knows where the defect is. The chief defect in these schools is the lack of a national basis for the instruction.

Whatever may be said of the German emperor in regard to his international policies, he certainly has the art of putting things clearly and of seeing conditions as they exist.

As the foundation of the studies of the old-style schools (corresponding very much to our classical high schools) we must take the mother-tongue. We ought to train up young Germans with a national spirit, not as Greeks or Romans. We must depart from the basis which has been the tradition of centuries, from the monastic schools of the Middle Ages, where Latin was the chief thing with a little Greek in addition. . . . Similarly, I should like to see the national ideal more inculcated in questions of history, geography, and legend. . . . Why are our young people misled? Why do so many people make their appearance with confused, unthought-out schemes for the improvement of the world? Because our young people do not know how the present state of things developed. . . . Coming to the actual occupation of our young people at school, it is absolutely necessary that we should reduce the number of hours of work. Our schools, and I speak more especially of the Gymnasium, have undertaken a task beyond human strength, and have, in my opinion, caused an over-production of highly educated people—more than the nation can bear. The expression "academic proletariat" (*das Abiturientenproletariat*), which we owe to Prince Bismarck, is a true one. The whole body of so-called "Hungerkandidaten" (especially those gentlemen who write for the press) are a danger to us. . . . I will therefore approve the foundation of no more such schools in the future unless their necessity can be proved. We have enough of them already.

Mutatis mutandis there is much in this utterance which we can apply to our existing system of schools, in providing for these young people who cannot go through the entire course of programme from elementary school through college, and in the methods of instruction in our existing high schools, to the end that our teaching may be more practical, effective, and modern.

A FOUR-M DASH

EDWIN L. MILLER

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The title of this narrative is derived from the fact that it deals with a motor trip made by four men, all of whose names began with M, and whom we will thinly disguise, for this occasion, as Mandan, McAlley, and McGann. It might, with equal propriety, be called a five-M Dash, for the name of our car also began with M; we christened it the Maximin, because it gave us the maximum of pleasure with the minimum of cost and vexation.

All of us are what some careless writer, with a fine disregard of tautology, has called impecunious pedagogues. In spite of friends who predicted that, embarking as we were upon an enterprise which only millionaires ought to undertake, we were sure to go broke, we made a journey of over two thousand miles, with no important deviations from the route and the time schedule which we had drawn up prior to our departure. Leaving Detroit, July 18, 1908, we visited in succession Toronto, Montreal, Boston, New York, and Buffalo, which we reached August 23. The result was such a small decrease in the assets of the party and such a large addition to our knowledge of geography, our good humor, and our stock of health, that a brief account of our experiences may be of use to others who would like to try something of the sort, but who, for various reasons, hesitate.

We got across the Detroit River and away from the Canadian customs officials about 10 A. M. Saturday, July 18, after leaving ten cents with the ferry company and nine dollars in the treasury of King Edward.

Before we had issued from the streets of Windsor, we were attacked by several dogs, who persisted carelessly in getting in

front of the machine, so that there was danger not only to them, but to us as well. One little fellow, indeed, got such a bump that he went yelping down the street a sadder and in all probability a wiser Towser. We thereupon installed Mandan, who was once a university pitcher, upon the front seat, and gave him a supply of stones of various calibers. Being left-handed he could throw from this position without interfering with the driver. He made it a rule never to throw at a dog unless he was in danger of being run over, but he took an artist's pleasure in sending the foolishly hostile canine back to his own barnyard, there to nurse his wounds and meditate over his temerity. The accuracy of Mandan's aim was noteworthy; McGann kept a record of his achievements which showed 27 hits out of 30 shots, and made a picture of a dog on which he placed a cross showing the point at which the rock and the dog collided in each instance; ultimately, however, the picture disappeared under the multiplicity of crosses. Western Ontario, to quote Mandan's own phrase, proved to be the best dog belt; that is to say, he had more chances to throw at them in this section; the farther east we went the more cautious grew the game until, in the vicinity of Boston, it disappeared almost entirely.

After a rather discouraging effort to get lunch at Leamington, a town on Lake Erie, 35 miles from Windsor, we took the wrong road, and found ourselves, at two in the afternoon, on a clay dike about fifteen feet high and three feet wide at the top. For miles on all sides stretched a dismal swamp. A few drops of rain fell, creating gruesome visions of sliding off into this delectable morass. Not having a chance to turn around, we were forced, however, to proceed; and came finally to the shore of Lake Erie, where we found several pious-looking old gentlemen grinding sand. When we asked them to tell us the way, one of them, in slow, melancholy tones, replied: "You are the fifth auto party that has come over that there dike this week. The language of most of them was profane."

When we recovered the main road, which we did after a loss of 17 miles and two hours, we found ourselves on an excellent highway. Indeed, it continued so to London. At London we

left the main road and visited in succession St. Mary's, Stratford, Guelph, and Brampton, before reaching Toronto. In this region we found about 5 per cent. of good macadam, about 10 per cent. of fair gravel, and about 85 per cent. of unmitigated clay. Dundas Street, on which we entered Toronto, suggested the rocky road to Dublin. From Toronto to Kingston there is a turnpike which, once excellent, is still good. East of Kingston, except in a few places, the roads are unspeakably bad; the one idea of the builders of these atrocious creations seems to have been to heap up in the middle of the highway anything and everything that would cut a tire. In one place there was a half-mile covered with broken pieces of bricks, and we ran for miles and miles over sharp three-cornered stones. If such a thing is possible, Western Quebec is worse in this respect than Eastern Ontario. The entrance to Montreal from the west is, to put it mildly, discreditable to that municipality. There is neither a bridge nor an adequate ferry from the mainland to the island of Montreal. Instead you are rowed on a crazy flat-boat propelled by three avaricious Frenchmen to a little island called the Isle Pierrot. This should be rechristened the Isle des Pierres, for it is nothing but a heap of stones. If anybody ever undertakes to bring Dante's *Inferno* up to date and desires a fitting punishment for erring autoists, he will do well to represent them as being compelled through all eternity to cross and recross the Isle Pierrot. From the eastern side of this abominable islet a second scow and more avaricious Gauls carry you over to Ste. Anne, if you are lucky enough in the process of embarking to escape losing your auto in the river. From here a fairly good road leads to Montreal, but the exit from the city on the south is hard on tires and tempers. In Vermont, on the other hand, we found good roads almost everywhere; in Massachusetts they were uniformly excellent. New Hampshire appeared in this respect to be scarcely equal to Vermont, and Connecticut decidedly inferior to Massachusetts. The road from New York to Buffalo, by the way of Albany, is good, except in a few places; in two or three years, however, unless all signs fail, it will be possible to make nearly all of this journey on state roads.

East of Leamington we ran for many miles along the top of the high bluff which overlooks Lake Erie. At intervals the road crossed at right angles ditches, or arroyos, of huge dimensions. Originally dug a few feet deep to secure farm drainage, many of these, through natural erosion, have now grown big enough to be a serious problem for the farmer and the road commissioner as well as an interesting sight for the tourist.

Late in the afternoon we bought some gasoline. Though the retail price in Detroit had been only 15 cents a gallon, we found it to be 35 in Canada. The man who sold it informed us, however, by way of consolation, that he was giving us imperial gallons, which seemed, in his opinion, to possess some mysterious virtue not shared by the Yankee measure. I believe that the imperial gallon, as a matter of fact, is a little larger; at all events, the price of it is.

We were now about ten miles from Ridgetown; it was half-past six and Saturday night. One of our party confessed that he had a slight cold and a large thirst, whereupon another suddenly remembered that in Ontario there is no way to obtain the means of remedying these evils between seven on Saturday evening and seven on Monday morning. So we broke the speed laws and reached Ridgetown at 6:59, only to be informed that it was 7:59. We had forgotten that Windsor time is 60 minutes faster than Detroit time.

Though our faces were much burned and destined in a few days to peel until they resembled the surface of a retreaded tire that has outlived its usefulness, we ate and slept that night with keen satisfaction. And so it continued. We quarreled with no innkeeper, but no innkeeper profited much by feeding us. When we set out Mandan was just recovering from a severe illness. McGann was pale and nervous from overwork, and McAlley was so thin that, to quote his own words, he couldn't tell whether the pains he had were in his stomach or his spinal column. We returned with fresh faces, ruddy with health, full of that abounding vitality which is indispensable to him who would deal justly with the American boy or girl, and agreed that we had had the best vacation of our lives.

"When in Rome do as the Romans do." This ancient maxim, modernized by Mandan into "Be where you're at," we took as our guiding principle, and to its resolute application can be ascribed much of our pleasure. Good, bad, or indifferent, we took things as we found them.

Mandan, especially, extracted amusement from almost everything that happened. Shortly before we set out he had met, in Chicago, a learned German, who was attending the University of Chicago in order to perfect his knowledge of English. We had been only a few days on the road when Mandan conceived the brilliant idea of sending each day to "Heiny," as he called him, a picture post-card with a message written in German words and up-to-date American idioms. The compositions he thus produced, if they did not mystify the recipient, at least had the merit of amusing us. They also record, with sufficient picturesqueness, some of our experiences. For these reasons I here set down a few of them. "Wir sind noch nicht von den Koppen zusammen gedrungen worden." (We haven't yet been pinched by the cops.) "Gestern waren wir ganz darin." (Yesterday we were all in.) "Wenn wir andere schlechte Wege schlagen, alles wird mit uns hinab sein." (If we strike any more bad roads, it will be all off with us.) "Dieses Land ist die Grenze." (This country is the limit.) "Wir, schlagen nur die hohe Platze." (We hit only the high places.) "Wir gehen etwas." (We are going some.) "Die Einwohner wollen uns durchnassen, aber sie müssen diese Gesammlung zeigen." (The natives are looking for a chance to soak us, but they've got to show this bunch.)

Usually the people were friendly. I can recall only two instances in which hostility was shown to us. One was in the outskirts of Cambridge, Mass., the other at Berlin, Ontario. In both cases the offenders were small boys, who threw stones at us, but, as their aim was less accurate than Mandan's, they did no damage. Mandan, who is a Harvard man, though visibly annoyed by the Cambridge incident, said nothing about it; at Berlin he expressed his displeasure by making a conundrum: "How does Berlin, Germany, differ from Berlin, Ontario?" Berlin, Germany, is on the Spree; Berlin, Ontario, is on the bum."

Of course we saw every day many things of uncommon interest. McAlley's camera was produced whenever material for a good picture presented itself, and while he took things the rest of us would lie luxuriously by the roadside discussing philosophy and contemplating the beauties of nature. Though Ontario has the reputation of being monotonously flat, it is so only when seen from a car window. The auto shows it to be full of lovely nooks and corners. Of these one remembers with especial pleasure the ponds and bridges and hills about Stratford; Lamp-ton Mills, just west of Toronto; the River Rouge, about 25 miles east of that city; the old forts along the St. Lawrence; and the panorama of rapids, ship canals, and lakes, as one journeys down that great river toward Montreal.

The scenery of Vermont in July, it goes without saying, is indescribably enticing. The contrast of the rich young green of the foliage with the flinty gray of the old rocks, presented as it is with endless variety of contour and enlivened by noisy brooks, removes the whole state, so to speak, from the realm of prose and makes of it, for me at least, what Sicily must have been for Theocritus and Ayrshire for Robert Burns. At all events, it caused a reckless consumption of films by Joe. Of all the spots in this land of rich beauty, that which most excited our enthusiasm was the gorge known as Williamstown Gulf. Here the road from Montpelier to the south leads through a pass only a few feet wide. It is dark with trees that grow thick on both sides, but when you issue from it you find yourself in a little upland valley, a kind of green bowl full of golden sunshine. At one end of this stands a mountain inn at which it is good to linger.

It was also good to linger at scores of beauty spots that presented themselves as we loafed across New Hampshire and Massachusetts, down the Connecticut, up the Hudson, through the Mohawk Valley, and so on to Buffalo. It is not good, however, to try to describe them, nor is it necessary; they are well known and the camera, anyhow, is mightier than the pen, except when it rains.

Unfortunately, it rained a good deal, and, our vacation days being numbered, we could not always wait for sunshine. So, as

mud and moisture seemed in no wise to affect the Maximin, we kept right on. Though I would gladly write at length concerning the performance of that admirable machine, I find that there is really nothing to say except that it was uniformly satisfactory. In our whole trip of over 2,000 miles we did not have even so much trouble as one flat tire and our other difficulties were on the same infinitesimal scale.

This happy result was due mainly, of course, to the structure of the machine. It is driven by two opposed horizontal cylinders of ten horse-power each, and weighs about 1,800 pounds. It is now possible to buy a thirty horse-power car with four cylinders for the same price that was charged for the Maximin, \$1,450.00; but, for a neophyte in motoring, I should still recommend the Maximin, because the cost of its maintenance is far less, and because its mechanism, being simpler, is less likely to get out of order. It will go as fast as it is safe or decent to go, and it will go anywhere that any car will go. Indeed, more than one chauffeur whom I have met on the road has said to me: "For touring I had much rather have that little car of yours than this big one."

Our freedom from trouble was due also in some measure, I believe, to the fact that we took care of the car ourselves. Each morning we oiled every bearing and inspected every nut from radiator to tail-lamp. At Prescott, Ont., we performed this function before the eyes of the owner of a big car en route from Montreal to Toronto by boat. When we had done he said: "Boys, that's the way to tour! That's the way to keep a car right! I don't know a thing about mine and my chauffeur costs me \$90.00 a month. He's so cursedly aristocratic that he won't touch any part of the machine except the wheel. Don't believe she's been oiled for a month! Wish I were going with you!"

On this particular morning we had had an experience with a Canadian steamboat company that deserves to be recorded for the benefit of future tourists. Being forewarned that the roads in this section were bad, we had inquired at their main office in Toronto how much it would cost to have the car taken by boat from Prescott to Montreal, and had been told that the charge

would be five dollars. The local agent at Prescott informed us that the rate was ten dollars, and when we appeared on the wharf the captain of the steamer demanded fifteen. Upon our expressing mild disapproval of this ascending and uncertain scale of prices and hinting that his company's methods seemed unbusinesslike, he answered that he did not carry autos as a matter of business but as a matter of favor. Whether this way of doing things is common to all Canadian corporations or not I cannot say, but I prefer the methods of the American company which furnishes transportation from Buffalo to Detroit. They charge a definite rate of nine dollars and treat the matter purely as a business transaction.

I have already hinted that the cost of the trip was reasonable. We kept an accurate account of our expenses, with the following result:

Gasoline	\$31.59
Oil	6.65
Garages and washing	15.50
Batteries	5.25
Permanent supplies (pliers, straps).....	5.35
Repairs and help (cleaning engine).....	23.03
Tire depreciation (2,000 miles at the rate of 2 cents a mile)	40.00
Ferries and tolls	5.21
Ontario license and bond	9.00
Hotels	205.98

\$347.56

The cost, exclusive of hotels, was therefore for each passenger \$35.39, or less than two cents a mile.

The conclusion from all this accumulated evidence is what I set out to prove, that if we, who were entirely without manual training or experience, could do these things so cheaply and pleasantly, the almost infinite delights of this truly royal method of spending a vacation are now within the reach of all prudent schoolmasters, or would be if they were adequately paid.

EDITORIAL NOTES

The retirement from administrative work of President Angell at the close of the present academic year is an event of scarcely less interest to

PRESIDENT ANGELL
AND SECONDARY
EDUCATION

those engaged in secondary education than to those whose work is primarily with the college and the university; it is significant not only for the alumni of the University of Michigan, but for the whole teaching profession.

It is not easy to estimate just how much of our educational advance is due to any one man. It is the significance of institutions that they take up, combine, and make effective for human progress the activities and talents of a great number. President Angell, himself, in responding at a recent gathering to the tributes of Michigan alumni, said with as much sincerity as modesty: "It is the University that has made me, not I that have made the University." But it is none the less true that the most important feature of the educational progress during the past generation has been the development of the state systems of education. In this work Michigan has been the leader, and whatever the merit of others in imitation and co-operation, the fact remains that a very large measure of the credit for the sane and steady advance of democracy in this respect, for the firm hold which higher education has upon the affections of all classes, and upon the intelligent judgment of the legislative bodies, is due to the singular good sense, the single-mindedness of aim, the gracious personality, and the genuine human interest which have made President Angell more than any other a representative of the movement.

The administrative agency for much of this new movement has been the system of accrediting the work of the high schools. This has resulted not only in improving the equipment and instruction of the high schools, in broadening the curriculum of the colleges, and in substituting a less terrifying test of ability, but also is likely to prove a most important factor in making it increasingly possible to give boys and girls the training best suited to their present growing life, rather than that which is primarily intended to fit them for later courses, at the expense, if need be, of vital interest and wholesome development.

The principle of this new departure had been adopted by the faculty of the university the year before Dr. Angell became president. Professors Olney and Frieze, to whom our schools owe so much in other ways, had worked out the plan which had been suggested by the German system of matriculating the graduates of the gymnasia. But the arrangement was still to be made to work. In the early years of his administration Presi-

dent Angell devoted a large measure of his own time and effort to make the scheme effective. He visited the schools of the state, conferred with teachers and officials, criticized, advised, and encouraged until the relations of mutual helpfulness and confidence were established. It is natural to believe that the ultimate reason for his success was that he was actuated fundamentally, not by regard for either university or high schools as such, but by the more immediately human desire that, as he puts it, every child in every home in the state should see an open door before him to the opportunities of higher education and largest usefulness. That this door stands open more widely than ever before and that the face of the American people is set steadily in this direction, is a sufficient source of satisfaction to one who has had a conspicuous part in the work.

But the *School Review* desires to extend its felicitations, not only as a representative of secondary education, but as a representative of a great body of teachers. Every member of a profession is in part made what he is by the spirit and standing of the profession. The teacher's profession, wherever Dr. Angell's influence has gone, stands higher in public esteem, its spirit is broader, because of that influence. Many types of men who have contributed in one form or another to give distinction to the profession and to enlarge its field have recently been prominently before the public because of death or retirement from active duty: Gilman, the organizer of investigation; Harper, whose vision for large things was joined with contagious enthusiasm and tireless executive energy; Harris, the philosophic administrator; Garman, the inspiring teacher; Mrs. Palmer, the vital and sympathetic agent of the new movement for higher education of women; Eliot, the masterful leader in new ways, the scholar speaking with authority in public affairs; Tucker, the embodiment of moral earnestness and commanding personal influence; Seelye, the sagacious and prudent administrator of a freer type of woman's college. If we should hazard a guess at what will be President Angell's most distinctive contribution, it would be, on the one hand, his sagacity and common-sense in dealing with affairs and with men, and on the other, his strong human interest which has enabled him not only to attach to himself and to his institution a great body of friends, but to direct educational work more broadly and deeply than perhaps he himself could appreciate at the time. He has been fond of saying that it is the great privilege of the teacher that his work with young people tends to keep him young in spirit. Certainly he is himself a notable illustration of his doctrine. But we suspect that here as in so many other cases environment alone is not the whole story. "We do receive but what we give," and if we teachers would find in our pupils the secret of perpetual youth we must bring the broad and fine human sympathy which has made President Angell the object not only of respect but of affection.

J. H. T.

PRESIDENT ANGELL
AND THE
TEACHING
PROFESSION

BOOK REVIEWS

The "Aeneid" of Virgil. Translated into English Verse by THEODORE C. WILLIAMS. Boston: Houghton Mifflin Co., 1908. Pp. 456. \$1.50.

I call this translation an honest and faithful version. I distinguish. By "honest" I mean that there are no disguises, no apparent shirkings or evasions of difficulties, or glossing over of obscurities in the original by ambiguous phraseology. In this respect the translation may be contrasted with such a notable work as Jowett's *Plato*. If one finds a passage perplexing or obscure in the original Greek, he will discover that it is seldom disentangled or cleared up in the English version. By "faithful" I mean that it is rare to find any idea in the original which this translation does not reproduce or suggest in some form; and seldom is anything imported for filling out a line without being justified by the implications of the text, as, for example, "frowning" (Book II, 500) and "old" in the following line. "Frowning" and "old" are not in Virgil, yet they enter naturally into the mental picture which Virgil's description calls up. The two sons of Atreus are foremost and fiercest of Priam's foes, and as they have now reached the threshold of the palace in the attack, we cannot help picturing them as scowling with rage and hate. Of "old," the worst one could say is that it is superfluous, for a woman surrounded by a "hundred daughters-in-law" must needs be advanced in years.

But this translation is not in the common acceptation of the term "literal," that is, a word-for-word rendering, nor have sacrifices been made for the sake of indicating the construction of the original. Accordingly, as the preface truly says, it could not be used as a "pony." A boy could hardly palm off upon his teacher a line of it as his own. The diction alone would betray him.

Still, to be honest and faithful is not enough. A translation, to be a good one, must be readable, and a metrical translation of the *Aeneid* must be poetic. These tests I am sure Mr. Williams' work will bear. To speak of a metrical version both readable and poetic is to suggest at once Dryden's famous work. It is interesting to compare the two versions. In my opinion Dryden's does not so well bear continuous reading, whether one reads silently or aloud. I have tried to find the secret of this, and believe it is due in part to the fact that rhymed couplets necessitate the expanding of brief poetic epithets or phrases into clauses; they necessitate sins of omission, perversion, and redundancy, and in general make against vigor and elevation. All these faults are illustrated in Dryden's translation, in one passage of simple description in Book VII, 25-36, which may be contrasted with the brevity and simplicity both of the original and of Mr. Williams' version.

Jamque rubescebat radiis mare, et æthere ab alto
Aurora in roseis fulgebat lutea bigis:
Cum venti posuere, omnisque repente resedit
Flatus, et in lento luctantur marmore tonsæ.
Atque hic Æneas ingentem ex æquore lucum

Prospicit: hunc inter fluvio Tiberinus amœno,
 Vorticibus rapidis et multâ flavus arenâ,
 In mare prorumpit. Variæ circumque supraque
 Assuetæ ripis volucres et fluminis alveo,
 Æthera mulcebant cantu, lucoque volabant.
 Flectere iter sociis, terræque advertere proras
 Imperat: et lætus fluvio succedit opaco.

Williams:

"Now morning flushed the wave, and saffron-garbed
 Aurora from her rose-red chariot beamed
 In highest heaven; the sea-winds ceased to stir;
 A sudden calm possessed the air, and tides
 Of marble smoothness met the laboring oar.
 Then gazing from the deep, Æneas saw
 A stretch of groves, whence Tiber's smiling stream,
 Its tumbling current rich with yellow sands,
 Burst seaward forth: around it and above
 Shore-haunting birds of varied voice and plume
 Flattered the sky with song, and circling far
 O'er river-bed and grove took joyful wing.
 Thither to landward now his ships he steered
 And sailed, high-hearted, up the shadowy stream."

Dryden:

"Now, when the rosy morn began to rise,
 And waved her saffron streamer through the skies;
 When Thetis blushed in purple, not her own,
 And from her face the breathing winds were blown,
 A sudden silence sate upon the sea,
 And sweeping oars, with struggling, urge their way.
 The Trojan, from the main, beheld a wood,
 Which thick with shades, and a brown horror, stood:
 Betwixt the trees the Tiber took his course,
 With whirlpools dimpled; and with downward force
 That drove the sand along, he took his way,
 And rolled his yellow billows to the sea.
 About him, and above, and round the wood,
 The birds that haunt the borders of his flood,
 That bathed within, or basked upon his side,
 To tuneful songs their narrow throats applied.
 The captain gives command; the joyful train
 Glide through the gloomy shade, and leave the main."

Dryden omits all reference to the chariot (*bigis*, l. 26), he sacrifices the metaphor of the marble sea (*marmore*, l. 28) and gives no hint of the varied plumages and songs of the birds, implied in Virgil's epithet (*variae*, l. 32). All these are significant touches in the picture that Virgil paints, and to omit them is to defraud the reader. Slighter redundancies or importations may be passed over, but one has the effect of a downright perversion of the

original. What Virgil saw in his mind's eye, and what he describes, is a charming landscape, a leafy grove with a smiling river flowing through it. There is no hint of Dryden's "brown horror," an invention antithetical to the atmosphere and spirit of the scene. The perversion is continued a few lines below. The Tiber in Virgil is "rich with yellow sands." In Dryden the stream drives the sand before it. Into this sand-driving torrent and "gloomy shade" Aeneas enters, blithe of heart, *laetus*. Did not Dryden see the incongruity? Finally, to illustrate the expanding of a poetic epithet into a clause, in Dryden's translation, I could not find a more striking example than

"The birds that haunt the borders of his flood,
That bathed within or basked upon his side,"

in contrast with Mr. Williams' "shore-haunting." In reading Dryden one thinks of what Bentley said of Pope's *Iliad*, "This is pretty, but it is not Homer." Of Mr. Williams' translation it will be said, "This is noble, and it is Virgil."

A fairer comparison would be between this translation and the admirable one in blank verse by James Rhoades. Rhoades's version is the closest to the original of any metrical version known to me; it is also skilful in reproducing the order and emphasis of the original; and it is melodious and poetic. But it is inferior to Mr. Williams' in splendor of diction, in majesty of movement, and to my ear in a certain resounding quality, which makes this new translation especially delightful to read aloud.

WILLIAM C. COLLAR

WELLESLEY HILLS, MASS.

Elements of Biology, a practical textbook correlating botany, zoölogy, and human physiology. By GEORGE WILLIAM HUNTER, A.M. New York: American Book Co., 1907. Pp. 445.

Apparently textbook writers have at last realized that one of the strongest arguments in favor of the teaching of biology in secondary schools is found in its application to the human body. We recently reviewed in these columns a book by Bailey and Coleman, *First Course in Biology*, which covers a field almost identical with the text now under consideration. Mr. Hunter's book aims "to correlate the allied subjects of botany, zoölogy, and human physiology in a general course of biology for the first year of the high school." The life-activities of both plants and animals are brought before young students by means of simple experiments in plant physiology, by laboratory and by field work. Material has been selected according to the syllabuses for elementary botany, zoölogy, and human physiology given by the New York State Education Department.

The book is divided into three parts. The first half-year is devoted to botany. After an introductory chapter of experiments in chemistry and physics, the cell and protoplasm are discussed; then the following subjects are considered: flowers, fruits, seeds and seedlings, roots and their work, buds and stems, leaves and their functions, ecology, flowerless plants. The second part, zoölogy, is to be studied during the second half-year. The animal types are taken up in the so-called logical order. The third part, on human physiology, begins in the

spring with the frog, several lessons each week being given over to this phase of biology. The following are the titles of the chapters: "Foods," "Digestion and Absorption," "The Blood, Circulation," "Muscles," "The Skeleton," "Respiration," "Excretion," "The Nervous System," "The Senses." Two lists of reference books, one for the pupil and another for the teacher are added at the end of almost every chapter. In an appendix a list of articles is given for the equipment of a small laboratory.

UNIVERSITY OF MICHIGAN

R. W. HEGNER

Goethe's Iphigenie auf Tauris. Edited with Introduction, Repetitional Exercises, Notes, and Vocabulary by PHILIP SCHUYLER ALLEN. Boston: Ginn & Co., 1906. Pp. 218. \$60.

A very instructive introduction of 62 pages, repetitional exercises for German composition, and an exhaustive vocabulary will make this edition equally valuable for the teacher and the student. Goethe's *Iphigenie* is well suited for fourth-year high-school German.

E. Bardey's Lehr-und Uebungsbuch der Deutschen Sprache. Vierte, verbesserte Auflage von O. WEISE. Leipzig und Berlin: B. G. Teubner, 1906. Pp. 185.

This is a German grammar written for German pupils who attend classes corresponding to the higher grades of American grammar schools. It could be used in this country wherever German is used exclusively in the classroom.

Der Heilige. Novelle von CONRAD FERDINAND MEYER. Edited with Introduction and Notes by CARL EDGAR EGGERT. New York: Henry Holt & Co., 1907. Pp. 215.

It was an excellent idea to prepare an edition of C. F. Meyer's charming novel *Der Heilige*. The book can be recommended as a reader in third-year high-school German. The extensive introduction and the careful notes will be found very handy for teacher and student.

Homer's Odysse in Auswahl nach der Uebersetzung von JOHANN HEINRICH VOSS, herausgegeben von G. FINSLER, 1906; *Sophokles' Antigone*, übersetzt von JOHANNES GEFFCKEN UND JULIUS SCHULTZ, 1907; *Torquato Tasso* von J. W. VON GOETHE, herausgegeben von S. FRICK. "Deutsche Schulausgaben," herausgegeben von Direktor DR. H. GAUDIG UND DR. G. FRICK. Leipzig und Berlin: Teubner, 1907.

Attention should be paid to the "Deutsche Schulausgaben." They are a great deal cheaper (bound from 15 cents to 30 cents a volume) and as far as print and annotations are concerned at least as good as the American editions. Binding and paper are excellent. The German publishers, especially B. G. Teubner in Leipzig, are only too glad to send sample copies free of charge to any American teacher who contemplates to introduce their textbooks in his classes.

THE UNIVERSITY OF CHICAGO

A. C. VON NOÉ

BOOKS RECEIVED

EDUCATION

- Personality in Education.* By JAMES P. CONOVER. New York: Moffat, Yard & Co., 1908. Pp. 265. \$1.25.
- History of Common School Education.* An Outline Sketch. By LEWIS F. ANDERSON. New York: Henry Holt & Co., 1909. Pp. 309. \$1.25.
- The Psychology of Thinking.* By IRVING ELGAR MILLER. New York: Macmillan, 1909. Pp. 303. \$1.25.
- The Making and the Unmaking of a Dullard.* By THOMAS EDWARD SHIELDS. Washington, D. C.: Catholic Education Press, 1909. Pp. 296.
- The Early Education of Children.* By LAURA L. PLAISTED. New York: Oxford University Press, 1909. Pp. 398.
- Pestalozzi: Sein Leben und seine Ideen.* Von PAUL NATORP. Leipzig and Berlin, 1909. Pp. 134. \$0.30.
- The Daily Meals of School Children.* By CAROLINE L. HUNT. United States Bureau of Education Bulletin No. 3, 1909, whole number 403. Washington: Government Printing Office, 1909. Pp. 62.
- A Textbook of Experimental Psychology.* By CHARLES S. MYERS. New York: Longmans, Green & Co., 1909. Pp. 432.
- Manual of Physical Exercises for Use in Public Schools.* By B. DOVEY. New Zealand: John Mackay, Government Printer. Illustrated. Pp. 68.
- Plays and Games for Indoors and Out.* Rhythmic Activities Correlated with the Studies of the School Programme. By BELLE RAGNAR PARSONS. New York: A. S. Barnes & Co., 1909. Illustrated. Pp. 215. \$1.50.
- The Folk Dance Book.* For Elementary Schools, Classroom, Playground, and Gymnasium. Compiled by C. WARD CRAMPTON. New York: A. S. Barnes & Co., 1909. Pp. 81. \$1.50.

ENGLISH

- Accusative with Infinitive and Some Kindred Constructions in English.* By JACOB ZEITLIN. New York: Macmillan, 1909. Pp. 177. \$1.00.
- New-World Speller.* By JULIA H. WOHLFARTH AND LILLIAN E. ROGERS. Yonkers-on-Hudson, N. Y.: World Book Co., 1909. Illustrated. Pp. 160.
- Famous Poems Explained.* Helps to Reading with the Understanding. By WAITMAN BARBE; with an Introduction by RICHARD G. BOONE. New York: Hinds, Noble & Eldredge, 1909.
- The Poetical Works of John Dryden.* (Cambridge Edition.) Edited by GEORGE R. NOYES. Boston: Houghton, Mifflin & Co., 1909. Pp. 1054. \$3.00.

The text includes all Dryden's undoubted poetical works, both original and translated, except his dramas; and, with the possible exception of some hymns, all that have been attributed to him with any show of reason. Besides his poetical works a large number of the poet's critical essays appear in the volume. It is beautifully printed in clear type on opaque paper so stitched as to open easily and "stay open." The Notes include a considerable portion of Sir Walter Scott's *Commentary on Dryden*.

FRENCH

Le français fonétique, méthode nouvelle pour apprendre et pour enseigner le français. Par LOUIS TESSON. Published in Paris, four times a year. American Branch, The French-American Publishing Company, 116 Chestnut Avenue, Jamaica Plain, Boston, Mass. Subscription, 50 cents per year.

GERMAN

Till Eulenspiegels Lustige Streiche. Selected and edited, with Notes, Vocabulary and Exercises, by FREDERICK BETZ. Boston: D. C. Heath & Co., 1909. Illustrated. Pp. 92. \$0.30.

LATIN

Tacitus: The Agricola. Edited with Introduction and Notes, by DUANE REED STUART. New York: Macmillan, 1909. Pp. 111. \$0.40.

MATHEMATICS

Harvey's Practical Arithmetics. By L. D. HARVEY. New York: American Book Co., 1908. Book I, pp. 300, \$0.35; Book II, pp. 400, \$0.50.

HISTORY AND CIVICS

The Development of the State. Its Governmental Organization and Its Activities. By JAMES QUAYLE DEALEY. New York: Silver, Burdett & Co., 1909. Pp. 343. \$1.50.

Famous Men of Modern Times. By JOHN M. HAAREN AND A. B. POLAND. New York: American Book Co., 1909. Pp. 352. \$0.50.

MISCELLANEOUS

Die Technik des Tafelzeichnens. Von ERNST WEBER. Leipzig und Berlin: B. G. Teubner, 1909. Mit 6 Illustrationen im Text und 40 Tafeln. Pp. 56. \$1.43.

Coe's School Readers. By FANNY E. COE. New York: American Book Co., 1908. Third Grade, pp. 284, \$0.40; Fourth Grade, pp. 360, \$0.50. Illustrated.

Banbury Cross Stories. Selected and arranged by FRANK W. HOWARD. New York: Chas. E. Merrill Co., 1909. Illustrated. Pp. 123. \$0.25.

Dick Whittington and Other Stories. Selected and Arranged by FRANK W. HOWARD. New York: Charles E. Merrill Co., 1909. Illustrated. Pp. 167. \$0.30.

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS ¹

IRENE WARREN

Librarian, School of Education, The University of Chicago

- Actual co-operation between libraries and schools. Pub. Lib. 14:142-46.
(Ap. '09.)
- AYRES, LEONARD P. The money cost of the repeater. Psycholog. Clinic.
3:49-58. (15 Ap. '09.)
- Physical defects and school progress. Amer. Phys. Educa. R.
14:197-207. (Ap. '09.)
- BARNES, EARL. Child-study in relation to elementary art education. Kind.
Mag. 21:261-67. (My. '09.)
- BINGHAM, MRS. KATE STEVENS. The playgrounds of greater Boston. New
Eng. Mag. 39:185-93. (Ap. '09.)
- BISHOP, AVARD LONGLEY. Geography in the universities abroad. Educa. R.
37:477-82. (My. '09.)
- BOSTWICK, ARTHUR E., MAXWELL, WILLIAM H., AND BUTLER, NICHOLAS
MURRAY. James Hulme Canfield. Lib. Journ. 34:143-45. (Ap. '09.)
- BURKS, JESSE D. Getting our bearings on industrial education. El. Sch. T.
9:445-55. (My. '09.)
- BUTLIN, IVA M. Honor system in college libraries. Pub. Lib. 34:162-64.
(Ap. '09.)
- CANFIELD, JAMES H. The library's part in education. Pub. Lib. 14:120.
(Ap. '09.)
- CHAMBERLAIN, ALEXANDER F., AND CHAMBERLAIN, ISABEL C. Studies of a
child. IV. "Meanings" and "definitions" in the forty-seventh and
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¹ Abbreviations: Amer. Phys. Educa. R., American Physical Educational Review; Educa., Education; Educa. News, Educational News; Educa. R., Educational Review; El. Sch. T., Elementary School Teacher; Good House-keep., Good Housekeeping; Harp. W., Harper's Weekly; Indian Educa., Indian Education; Journ. of Educa., Journal of Education; Kind. Mag., Kindergarten Magazine; Kind. R., Kindergarten Review; Lib. Journ., Library Journal; Liv. Age, Living Age; New Eng. Mag., New England Magazine; Out., Outlook; Pedagog. Sem., Pedagogical Seminary; Psycholog. Clinic, Psychological Clinic; Pub. Lib., Public Libraries; Teach. Coll. Rec., Teachers College Record; Tech. World Mag., Technical World Magazine; Utah Educa. R., Utah Educational Review.

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